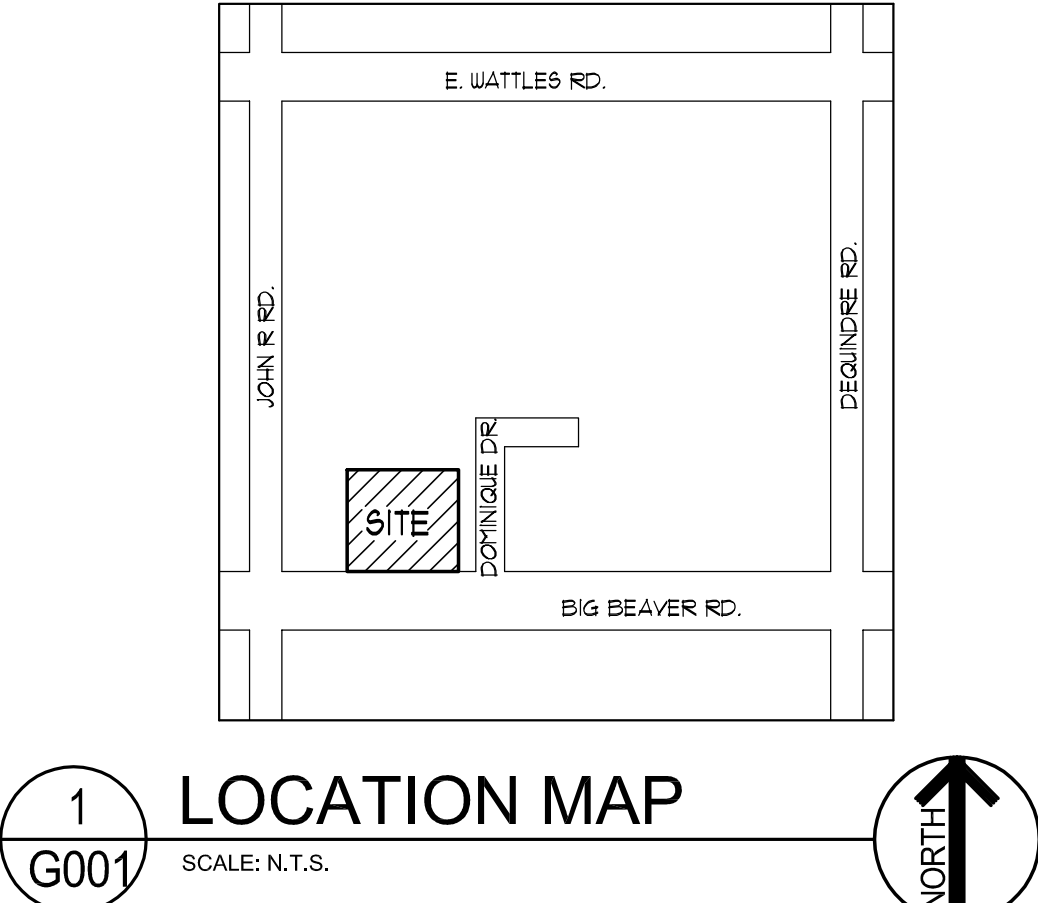
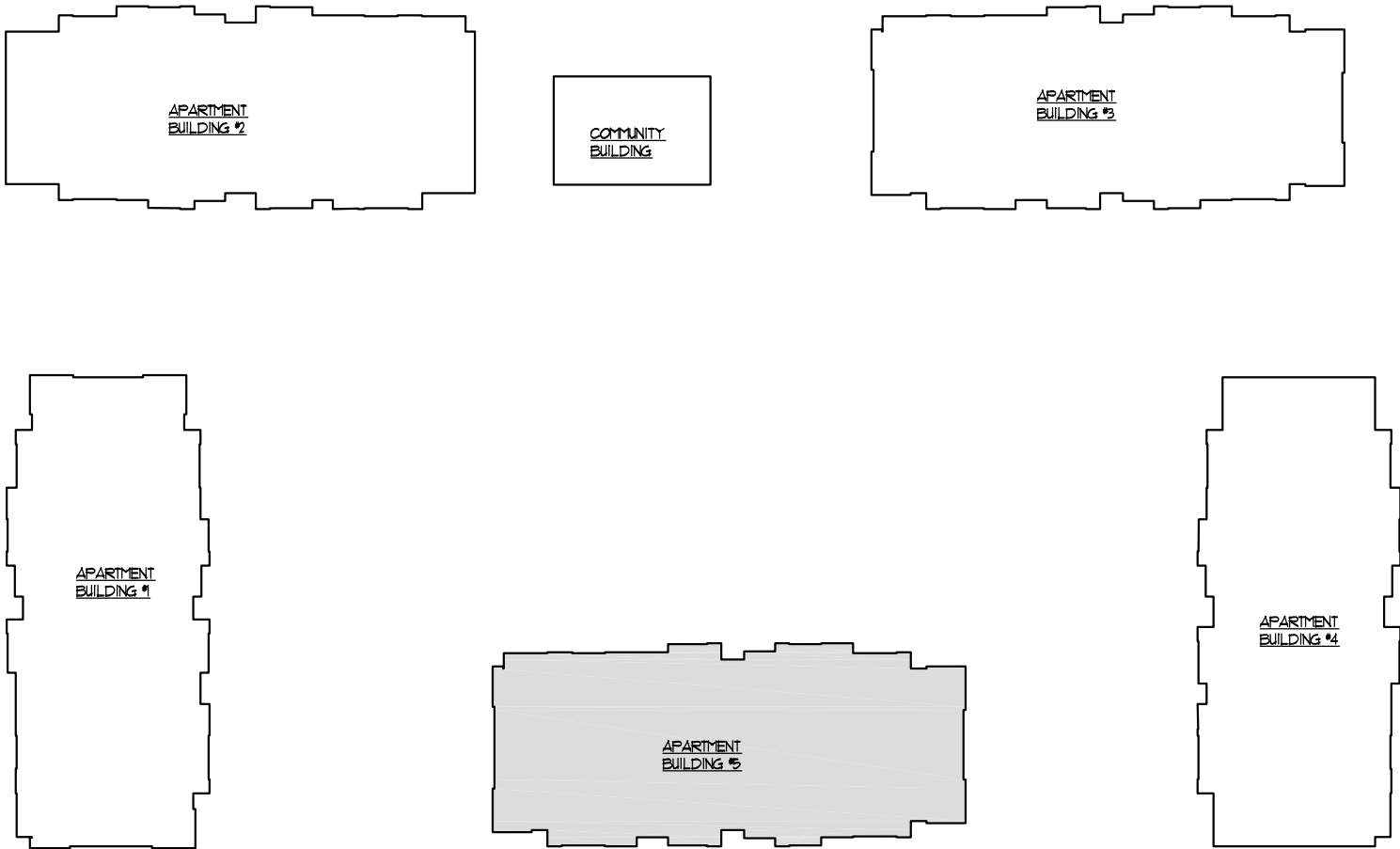


Troy Crossing  
Apartment Building #5  
XXXX Big Beaver Road  
Troy, MI 48083

12/23/2021 Review Set



2  
G001 VICINITY MAP  
SCALE: N.T.S.

1  
G001 LOCATION MAP  
SCALE: N.T.S.



DRAWING LIST:

GENERAL:	COVER SHEET
G01.0	CIVIL ENGINEERING:
C-3	DIMENSION & PAVING PLAN
ARCHITECTURAL:	
SF01.1	PROPOSED SITE PLAN
A01.1	CODE ANALYSIS
A01.2	CODE ANALYSIS
A01.3	CODE ANALYSIS
A01.4	FIRE RATED ASSEMBLIES
A01.5	FIRE RATED ASSEMBLIES
A01.6	FIRE RATED ASSEMBLIES
A01.7	FIRE RATED ASSEMBLIES
A01.8	FIRE RATED ASSEMBLIES
A01.9	FIRE RATED ASSEMBLIES
A11.1	FIRST FLOOR PLAN
A11.2	SECOND FLOOR PLAN
A11.3	THIRD FLOOR PLAN
A11.4	ROOF PLAN
A11.5	ENLARGED FIRST FLOOR PLAN
A11.6	ENLARGED FIRST FLOOR PLAN
A11.7	ENLARGED SECOND FLOOR PLAN
A11.8	ENLARGED SECOND FLOOR PLAN
A11.9	ENLARGED THIRD FLOOR PLAN
A11.10	ENLARGED THIRD FLOOR PLAN
A11.11	FIRST AND SECOND FLOOR REFLECTED CEILING PLAN
A11.12	THIRD FLOOR REFLECTED CEILING PLAN
A11.13	ELEVATOR DETAILS
A11.14	ELEVATOR SPEC
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PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING # 5

REVIEW SET  
12-23-2021

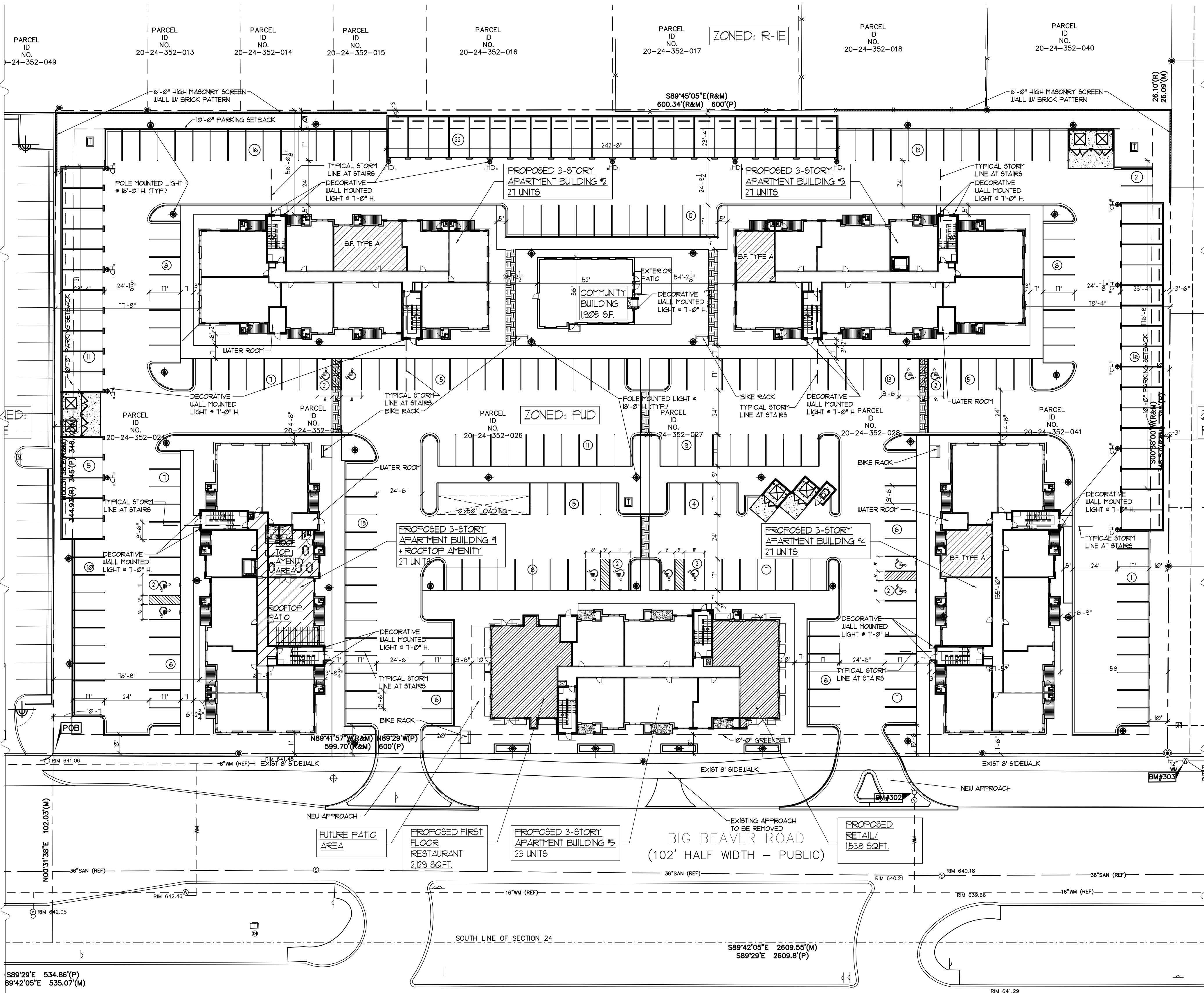
ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN  
THE FIELD BY THE CONTRACTOR. THE  
CONTRACTOR IS SOLELY RESPONSIBLE  
FOR COORDINATION OF ALL DIMENSIONS.

JOB NO. 15-0353  
D.B./C.B. R.A./P.D.  
ISSUANCES  
NO DESCRIPTION DATE  
1 REVIEW SET 12/23/21

SHEET TITLE  
PROPOSED SITE  
PLAN

DWG. NO.  
A0.1.1



PROPOSED BUILDING			
CODE COMPLIANCE: CITY OF TROY CODE OF ORDINANCES, MICHIGAN BUILDING CODE 2021			
ZONING ANALYSIS	REQUIRED / ALLOWED	PROVIDED	REFERENCE
PROPERTY AREA		261,363 SF.	
OPEN SPACE	10%	SEE LANDSCAPE DRAWINGS	
ZONED	RUD		
CONSTRUCTION TYPE		IIB (RETAIL) / VA (APARTMENTS)	M.B.C.-12, SEC. 602
USE GROUP		B, M, A-2/ R-2	M.B.C.-12, SEC. 309
BUILDING AREA			
RESIDENTIAL UNIT #1	6 EFFICIENCY UNITS + 6 (1) BEDROOM UNIT + 3 (2) BEDROOM UNITS + 2 (3) BEDROOM UNITS + 21 UNITS		
RESIDENTIAL UNIT #2	6 EFFICIENCY UNITS + 6 (1) BEDROOM UNIT + 3 (2) BEDROOM UNITS + 2 (3) BEDROOM UNITS + 21 UNITS		
RESIDENTIAL UNIT #3	6 EFFICIENCY UNITS + 6 (1) BEDROOM UNIT + 3 (2) BEDROOM UNITS + 2 (3) BEDROOM UNITS + 21 UNITS		
RESIDENTIAL UNIT #4	6 EFFICIENCY UNITS + 6 (1) BEDROOM UNIT + 3 (2) BEDROOM UNITS + 2 (3) BEDROOM UNITS + 21 UNITS		
RESIDENTIAL UNIT #5	5 EFFICIENCY UNITS + 6 (1) BEDROOM UNIT + 3 (2) BEDROOM UNITS + 2 (3) BEDROOM UNITS + 21 UNITS		
COMMUNITY BUILDING	1,905 SF.		
BUILDING HEIGHT			ORD. SEC. 13.02
HEIGHT	N/A - DETERMINED BY RUD PLAN PRESENTED		
STORIES	N/A - DETERMINED BY RUD PLAN PRESENTED		
BUILDING SETBACKS			ORD. SEC. 13.02
FRONT	N/A - DETERMINED BY RUD PLAN PRESENTED	11'-0" (APTS) 11'-6" (RETAIL)	
SIDE	N/A - DETERMINED BY RUD PLAN PRESENTED	3'-0" (WEST GARAGES) 10'-0" (WEST APARTMENTS) 3'-6" (EAST GARAGES) 50'-0" (EAST APARTMENTS)	
REAR	N/A - DETERMINED BY RUD PLAN PRESENTED	3'-0" (GARAGES) 56'-0" (APARTMENTS)	
GREENBELT			ORD. SEC. 13.02
ALONG FRONT OF PROPERTY	10'-0"	10'-0"	
PARKING SETBACKS			ORD. SEC. 13.02 & 13.06
FRONT	N/A - DETERMINED BY RUD PLAN PRESENTED	10'-0"	
SIDE	10'-0"	10'-1" (WEST), 10'-0" (EAST)	
REAR	10'-0"	10'-0"	
PARKING			ORD. TABLE 13.06-A
MULTI-FAMILY RESIDENTIAL	2 SPACES FOR EACH DWELLING UNIT 102 UNITS x 2 = [204 SPACES] 1 SPACE FOR EACH EFFICIENCY 29 UNITS x 1 = [29 SPACES] [TOTAL = 233 PARKING SPACES]		
RETAIL	1 SPACE FOR EA. 250 SF. OF GROSS FLOOR AREA [1,905 SF.] / 250 = [8 SPACES]		
STANDARD RESTAURANT	1 SPACE FOR 2 SEATS 90 SEATS / 2 = [45 SPACES] [284 PARKING SPACES]		
TOTAL	201-300 SPACES + [1 SPACES]	54 GARAGES + 230 RETAIL SPACES + [284 PARKING SPACES]	
SPACE SIZE	9'-0"W x 22'-0"L @ 0" TO 15" W/ 12'-0" AISLE 9'-6"W x 19'-0"L @ 15" TO 30" W/ 24'-0" AISLE	10 BF. SPACES (INCLUDED ABOVE)	ORD. TABLE 13.06-B
PARKING LANDSCAPE ISLAND SIZE	200 SF.		ORD. SEC. 13.02
LOADING/UNLOADING	TO BE DETERMINED BY PLANNING DEPT.		
SPACE SIZE	10'-0"W x 50'-0"L		ORD. SEC. 13.09
SPACES REQUIRED	5,001 - 6,000 G.F.A. = 1 SPACE + 1 SPACE FOR EACH ADDITIONAL 10,000 G.F.A.	1 SPACE	ORD. TABLE 13.09-A



CODE ANALYSIS

Troy Crossing  
Troy, Michigan

APPLICABLE CODES:

2015 Michigan Building Code, (MBC 2015)  
2015 Michigan Mechanical Code, (MMC 2015)  
2015 Michigan Plumbing Code (MPC 2015)  
2015 International Fuel Gas Code (IFGC 2015)  
2011 National Electric Code w/state amendments (NEC 2011)  
International Fire Code, 2015  
Accessibility: Michigan Barrier Free Design Law, P.A. 1966 as amended and the 2009 ICC/ANSI A117  
Standard as referenced from Chapter 11 of the 2015 MBC.  
2013 NFPA 13 Fire Suppression  
2013 NFPA 12 Fire Alarm

USE GROUP:  
Residential (Multi-family)-Section 3101 \_\_\_\_\_ R-2 Residential/A-2 / M

CONSTRUCTION CLASSIFICATION: Chapter 6 (602.3) \_\_\_\_\_ V-A, Protected

FIRE SUPPRESSION (Fully Sprinklered) (Chapter 7) \_\_\_\_\_ Protected (NFPA-R3)

HEIGHT LIMITATION (Table 504.3 AND 504.4) R-2 \_\_\_\_\_ 4 stories, 60'-0"  
Provided \_\_\_\_\_ 3 stories, 31'-0"

ALLOWABLE AREA: (Table 503):  
R-2 Residential \_\_\_\_\_ 12,000 s.f.  
Proposed First Floor \_\_\_\_\_ 5,479 s.f.  
Proposed Second Floor \_\_\_\_\_ 9,100 s.f.  
Proposed Third Floor \_\_\_\_\_ 9,100 s.f.

A-2 Restaurant \_\_\_\_\_ 34,500 s.f.  
Proposed Restaurant \_\_\_\_\_ 2,129 s.f.

M Mercantile \_\_\_\_\_ 42,000 s.f.  
Proposed Retail \_\_\_\_\_ 1571 s.f.

EXIT ACCESS

Occupancy for Residential (Table 1004.12) 200 sq ft per occupant (27,219 s.f. / 200) \_\_\_\_\_ 136 occupants (max.)  
First Floor Occupancy (9,019 sq. ft. / 200 sq. ft.) \_\_\_\_\_ 45 occupants  
Second Floor Occupancy (9,100 sq. ft. / 200 sq. ft.) \_\_\_\_\_ 46 occupants  
Third Floor Occupancy (9,100 sq. ft. / 200 sq. ft.) \_\_\_\_\_ 46 occupants

EGRESS WIDTH PER OCCUPANT (Section 1005)

Egress width at stairs (Section 1005.3) (width inches per occupant) (with sprinklers) \_\_\_\_\_ 03 inches  
Egress width at stairs (Section 1005.3.2) (width inches per occupant) (with sprinklers) \_\_\_\_\_ min. 44 inches (Section 1011.2)  
Egress width provided at level components (corridors) and ramps \_\_\_\_\_ min. 36 inches w/ less 50 occupants (Sec. 1011.2)  
Egress width at other egress components (Section 1005.3.2) (width inches per occupant) (with sprinklers) \_\_\_\_\_ 02 inches

Egress width provided at stairs \_\_\_\_\_ 48" (160 max. Capacity)  
Egress width provided at level components (corridors) and ramps \_\_\_\_\_ 63" (315 max. Capacity)

ALLOWABLE MAXIMUM TRAVEL DISTANCE: (Table 1017.2)

Egress from dwelling units shall not lead through other sleeping areas, toilet rooms, or baths. (with sprinklers) \_\_\_\_\_ 250 ft.  
Actual Maximum Travel Distance provided: \_\_\_\_\_ 154 ft. (worst case)

ALLOWABLE DEAD END DISTANCE (1020.4)

Dead end distance allowed \_\_\_\_\_ 50 ft.  
Actual dead end distance provided \_\_\_\_\_ 39 ft.

FIRE RESISTANCE RATING OF STRUCTURAL ELEMENTS (Table 601)

Exterior Load bearing Wall Rating Required: (Table 601)(Type VA) \_\_\_\_\_ 1 Hr  
Exterior Load bearing Wall Rating Provided: \_\_\_\_\_ 1 Hr

Interior Bearing Wall Rating Required: (Table 601)(Type VA) \_\_\_\_\_ 1 Hr  
Interior Bearing Wall Rating Provided: \_\_\_\_\_ 1 Hr

Floor Construction Rating Required: (Table 601) \_\_\_\_\_ 1 Hr  
Floor Construction Provided: \_\_\_\_\_ 1 Hr

Roof construction (Table 601) \_\_\_\_\_ 1 Hr  
Roof construction provided \_\_\_\_\_ 1 Hr

Shaft Enclosures (Section 713.4)

Shaft openings in floor/ceiling assemblies (Section 713.4) \_\_\_\_\_ 1 Hr  
Shaft Enclosure Rating Provided \_\_\_\_\_ 1 Hr

Elevator Shaft Enclosure: Rating Required (Section 713.4) \_\_\_\_\_ 1 Hr  
Elevator Shaft Enclosure Rating Provided \_\_\_\_\_ 2 Hr

Exit Enclosures (Section 1023.2)

Exit Enclosure Rating Required \_\_\_\_\_ 1 Hr  
Exit Enclosure Rating Provided \_\_\_\_\_ 2 Hr

Fire Partitions (Section 708)

Corridor Separations: Rating Required (Table 1010.1) \_\_\_\_\_ 1 Hr  
Corridor Separations: Rating Provided \_\_\_\_\_ 1 Hr

Tenant / Dwelling Unit Separations: Rating Required (Section 708.3) \_\_\_\_\_ 1 Hr  
Tenant / Dwelling Unit Separation Rating Provided \_\_\_\_\_ 1 Hr

Separation of Occupancies (Section 508)

A and R Occupancies \_\_\_\_\_ 1 Hr  
Separation Rating Provided \_\_\_\_\_ 1 Hr

A and M Occupancies \_\_\_\_\_ 1 Hr  
Separation Rating Provided \_\_\_\_\_ 1 Hr

ELEVATOR

Elevator Required (sec. 1009.21) \_\_\_\_\_  
In a Building Less Than 4 Floors Above Level of Exit Discharge  
Number Required \_\_\_\_\_ 0 Elevator  
Number Provided \_\_\_\_\_ 0 Elevator

Fire Service Access Elevator (sec. 403.6.1)

Number Required \_\_\_\_\_ 0 Elevator  
Number Provided \_\_\_\_\_ 0 Elevator

Elevator Car to Accommodate Ambulance Stretcher 24"x84" (sec/ 3002.4)

Number Required \_\_\_\_\_ 0 Elevator  
Number Provided \_\_\_\_\_ 0 Elevator

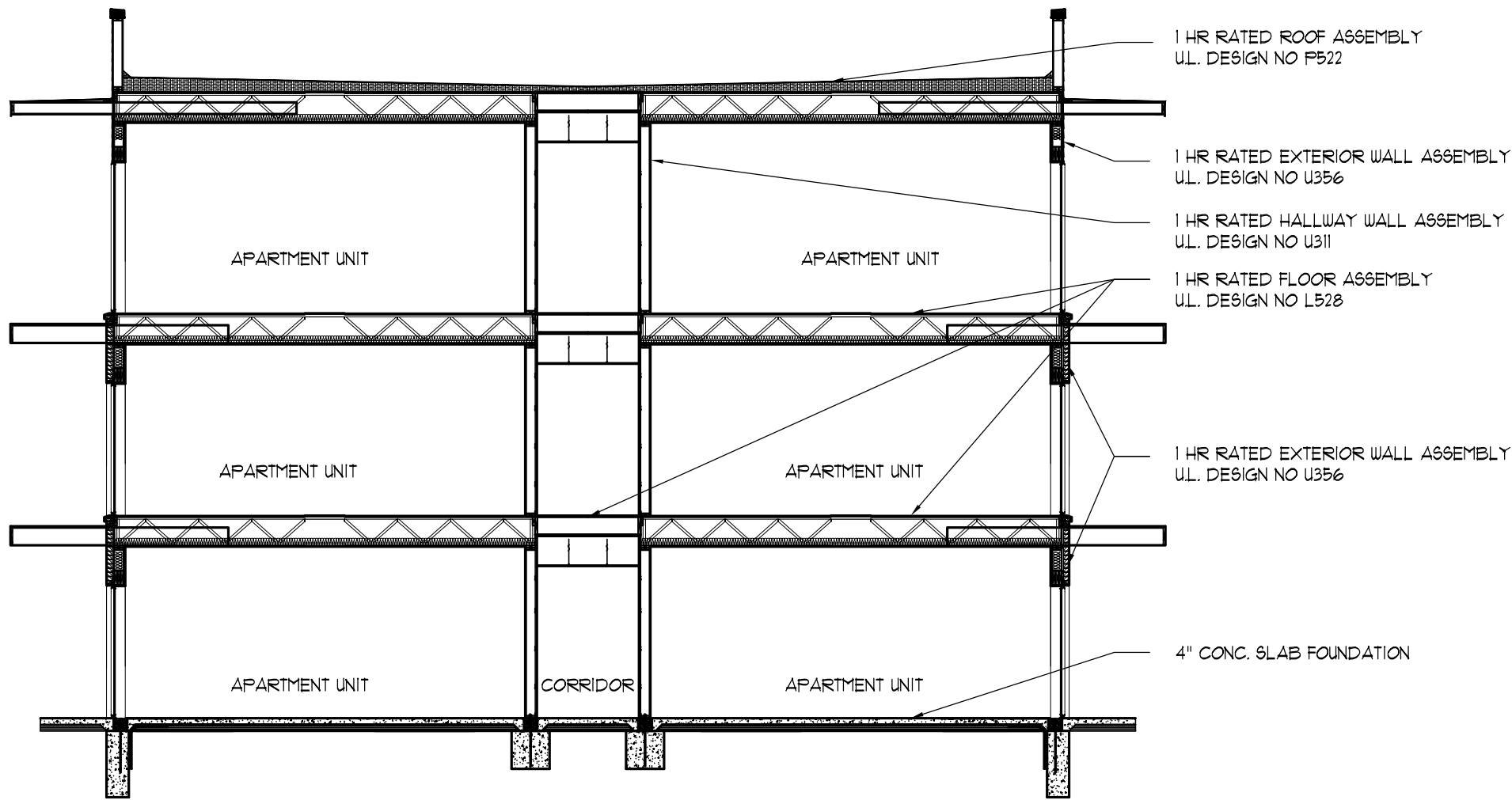
APARTMENT UNIT TYPES (SECTION 10716.22)

Unit Types A & B Elevator Required  
Type A Units (sec. 10716.221)  
2% of Units in Occupancies Containing More Than 20 Units  
Number Required = (3) X 2% = ..... 262 Units  
Number Provided = ..... 3 Units  
Without Elevator Service, Locate Type A Units On 1st Floor Only (sec. 10717.1)

Type B Units (sec. 10716.222)

In A Structure With More Than 4 Units, All Units Shall Be Type B Units  
Number Provided = ..... 9 Units  
Without Elevator Service, Only Units On 1st Floor To Be Type B Units (sec. 10717.1)

NOTE:  
ALL ADA TYPE A UNITS ARE  
LOCATED IN BUILDINGS #2, #3 & #4.



1 TYPICAL BUILDING SECTION

SCALE: 1/8" = 1'-0"

DWELLING UNIT SCHEDULE BUILDING #1														TOTAL	
UNIT LABEL	STUDIO A TYPE B	STUDIO B TYPE A	STUDIO B TYPE B	1-1A TYPE A	1-1A TYPE B	1-1B TYPE B	1-1D TYPE B	2-2A TYPE B	2-2B TYPE A	2-2B TYPE B	2-2C TYPE B	2-2D TYPE B	2-2E TYPE B		
UNIT DESCRIPTION	STUDIO	STUDIO	STUDIO	1 BED 1 BATH	1 BED 1 BATH	1 BED 1 BATH	1 BED 1 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED, 2 BATH	2 BED, 2 BATH		
UNIT AREA	614 SF.	637 SF.	653 SF.	744 SF.	744 SF.	636 SF.	711 SF.	951 SF.	1031 SF.	1031 SF.	1003 SF.	1062 SF.	1218 SF.		
UNIT LOCATION															
FIRST FLOOR	1	-	1	-	1	1	-	2	-	1	1	1	-	9	
SECOND FLOOR	1	-	1	-	1	1	-	2	-	1	1	-	1	9	
THIRD FLOOR	1	-	1	-	1	1	-	2	-	1	1	-	1	9	
UNIT TOTAL	3	0	3	0	3	3	0	6	0	3	3	1	2	27	

DWELLING UNIT SCHEDULE BUILDING #2														TOTAL	
UNIT LABEL	STUDIO A TYPE B	STUDIO B TYPE A	STUDIO B TYPE B	1-1A TYPE A	1-1A TYPE B	1-1B TYPE B	1-1D TYPE B	2-2A TYPE B	2-2B TYPE A	2-2B TYPE B	2-2C TYPE B	2-2D TYPE B	2-2E TYPE B		
UNIT DESCRIPTION	STUDIO	STUDIO	STUDIO	1 BED 1 BATH	1 BED 1 BATH	1 BED 1 BATH	1 BED 1 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED, 2 BATH	2 BED, 2 BATH		
UNIT AREA	614 SF.	637 SF.	653 SF.	744 SF.	744 SF.	636 SF.	711 SF.	951 SF.	1031 SF.	1031 SF.	1003 SF.	1062 SF.	1218 SF.		
UNIT LOCATION															
FIRST FLOOR	1	-	1	-	1	-	1	2	1	-	1	1	-	9	
SECOND FLOOR	1	-	1	-	1	-	1	2	-	1	1	-	1	9	
THIRD FLOOR	1	-	1	-	1	-	1	2	-	1	1	-	1	9	
UNIT TOTAL	3	0	3	0	3	0	3	6	1	2	3	1	2	27	

DWELLING UNIT SCHEDULE BUILDING #3														TOTAL	
UNIT LABEL	STUDIO A TYPE B	STUDIO B TYPE A	STUDIO B TYPE B	1-1A TYPE A	1-1A TYPE B	1-1B TYPE B	1-1D TYPE B	2-2A TYPE B	2-2B TYPE A	2-2B TYPE B	2-2C TYPE B	2-2D TYPE B	2-2E TYPE B		
UNIT DESCRIPTION	STUDIO	STUDIO	STUDIO	1 BED 1 BATH	1 BED 1 BATH	1 BED 1 BATH	1 BED 1 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED, 2 BATH	2 BED, 2 BATH		
UNIT AREA	614 SF.	637 SF.	653 SF.	744 SF.	744 SF.	636 SF.	711 SF.	951 SF.	1031 SF.	1031 SF.	1003 SF.	1062 SF.	1218 SF.		
UNIT LOCATION															
FIRST FLOOR	1	1	-	-	1	1	-	2	-	1	1	1	-	9	
SECOND FLOOR	1	-	1	-	1	1	-	2	-	1	1	-	1	9	
THIRD FLOOR	1	-	1	-	1	1	-	2	-	1	1	-	1	9	
UNIT TOTAL	3	1	2	0	3	3	0	6	0	3	3	1	2	27	

DWELLING UNIT SCHEDULE BUILDING #4														TOTAL	
UNIT LABEL	STUDIO A TYPE B	STUDIO B TYPE A	STUDIO B TYPE B	1-1A TYPE A	1-1A TYPE B	1-1B TYPE B	1-1D TYPE B	2-2A TYPE B	2-2B TYPE A	2-2B TYPE B	2-2C TYPE B	2-2D TYPE B	2-2E TYPE B		
UNIT DESCRIPTION	STUDIO	STUDIO	STUDIO	1 BED 1 BATH	1 BED 1 BATH	1 BED 1 BATH	1 BED 1 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED, 2 BATH	2 BED, 2 BATH		
UNIT AREA	614 SF.	637 SF.	653 SF.	744 SF.	744 SF.	636 SF.	711 SF.	951 SF.	1031 SF.	1031 SF.	1003 SF.	1062 SF.	1218 SF.		
UNIT LOCATION															
FIRST FLOOR	1	-	1	-	0	-	1	2	1	-	1	1	-	9	
SECOND FLOOR	1	-	1	-	1	-	1	2	-	1	1	-	1	9	
THIRD FLOOR	1	-	1	-	1	-	1	2	-	1	1	-	1	9	
UNIT TOTAL	3	0	3	1	2	0	3	6	1	2	3	1	2	27	

DWELLING UNIT SCHEDULE BUILDING #5 (CURRENT SUBMISSION)														TOTAL	
UNIT LABEL	STUDIO A TYPE B	STUDIO B TYPE A	STUDIO B TYPE B	1-1A TYPE A	1-1A TYPE B	1-1B TYPE B	1-1D TYPE B	2-2A TYPE B	2-2B TYPE A	2-2B TYPE B	2-2C TYPE B	2-2D TYPE B	2-2E TYPE B		
UNIT DESCRIPTION	STUDIO	STUDIO	STUDIO	1 BED 1 BATH	1 BED 1 BATH	1 BED 1 BATH	1 BED 1 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED 2 BATH	2 BED, 2 BATH	2 BED, 2 BATH		
UNIT AREA	614 SF.	637 SF.	653 SF.	744 SF.	744 SF.	636 SF.	711 SF.	951 SF.	1031 SF.	1031 SF.	1003 SF.	1062 SF.	1218 SF.		
UNIT LOCATION															
FIRST FLOOR	1	-	-	-	1	-	1	0	0	1	1	0	-	5	
SECOND FLOOR	1	-	1	-	1	-	1	2	-	1	1	-	1	9	
THIRD FLOOR	1	-	1	-	1	-	1	2	-	1	1	-	1	9	
UNIT TOTAL	3	0	2	0	3	0	3	4	0	3	3	0	2	23	

STATUS:	SUBMITTED APPROVED	SUBMITTED APPROVED	SUBMITTED APPROVED	SUBMITTED APPROVED	CURRENT SUBMISSION
	BUILDING #1	BUILDING #2	BUILDING #3	BUILDING #4	BUILDING #5
STUDIO A TYPE B	●	●	●	●	●
STUDIO B TYPE A			●		
STUDIO B TYPE B	●	●	●	●	●
1-1A TYPE A				●	
1-1A TYPE B	●	●	●	●	●
1-1B TYPE B	●		●		
1-1D TYPE B		●			●
2-2A TYPE B	●	●	●	●	●
2-2B TYPE A		●			
2-2B TYPE B	●	●	●	●	●
2-2C TYPE B	●	●	●	●	●
2-2D TYPE B	●	●	●	●	●
2-2E TYPE B	●	●	●	●	●

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN  
THE FIELD BY THE CONTRACTOR. THE  
CONTRACTOR IS SOLELY RESPONSIBLE  
FOR COORDINATION OF ALL DIMENSIONS.

JOB NO. 15-0353

D.B./C.B. R.A./P.D.

ISSUANCES

NO DESCRIPTION DATE  
1 REVIEW SET 12/23/21

SHEET TITLE  
CODE ANALYSIS

DWG. NO.

A0.0.1

of

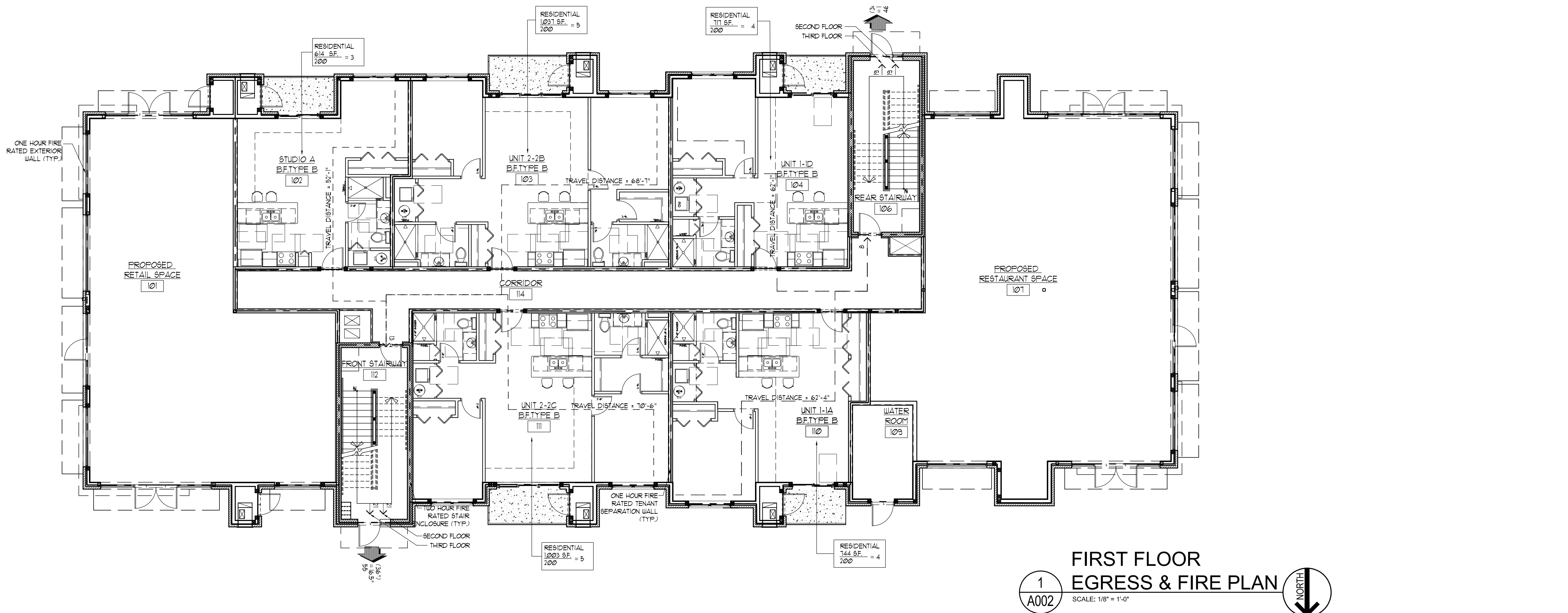




PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083



ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATION OF ALL DIMENSIONS.

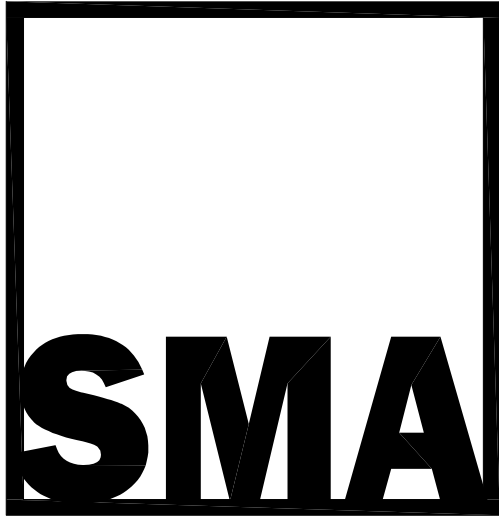
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D.B/C.B	R.A./P.D	
ISSUANCES		
NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
CODE ANALYSIS

DWG. NO.

**A0.0.2**





Serra Marko Associates

**Architects**

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Troy, MI 48083

s-m-associates.com

248.457.6903

info@s-m-associates.com

PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

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THE FIELD BY THE CONTRACTOR. THE  
CONTRACTOR IS SOLELY RESPONSIBLE  
FOR COORDINATION OF ALL DIMENSIONS.

JOB NO. 15-0353

D.B./C.B. R.A./P.D.

ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

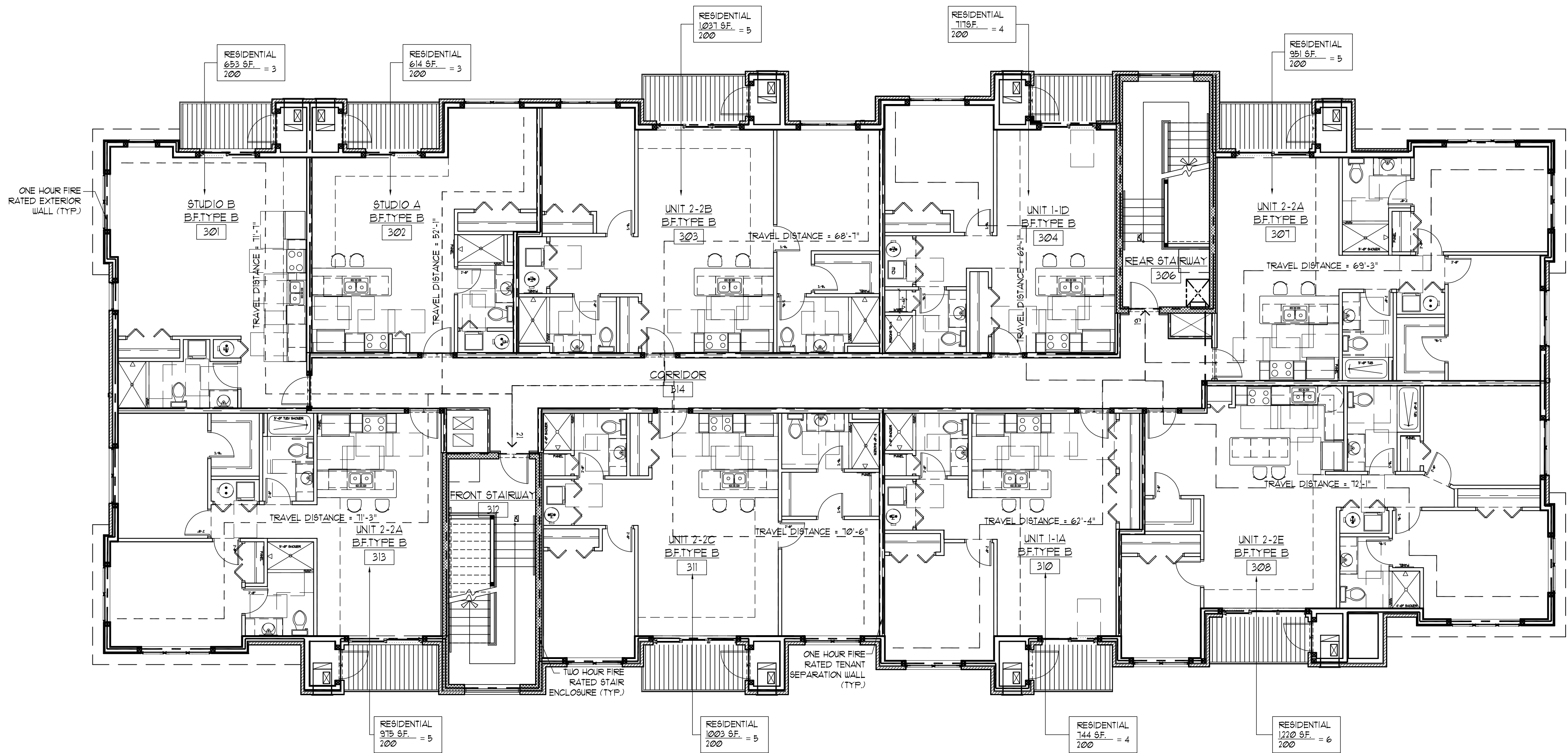
SHEET TITLE  
CODE ANALYSIS

DWG. NO.  
**A0.0.3**  
of

#### EGRESS LEGEND

USE OF SPACE  
AREA (SQUARE FEET)  
POPULATION  
FLOOR AREA /  
OCCUPANT  
NUMBER OF PEOPLE  
APPROACHING EXIT  
NUMBER OF PEOPLE EXITING  
REQUIRED WIDTH OF EXIT  
ACTUAL WIDTH OF EXIT

1/2 HR RATED FIRE SEPARATION ASSEMBLY  
1 HR RATED FIRE SEPARATION ASSEMBLY  
2 HR RATED FIRE SEPARATION ASSEMBLY  
3 HR RATED FIRE SEPARATION ASSEMBLY  
P.O.T. PATH OF TRAVEL  
AR ACCESSIBLE ROUTE



#### THIRD FLOOR EGRESS & FIRE PLAN

1  
A003

SCALE: 1/8" = 1'-0"





## Design No. P522

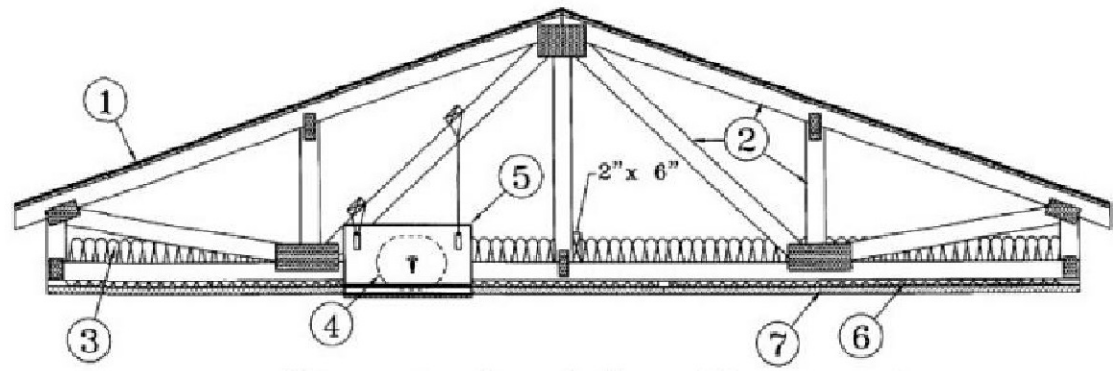
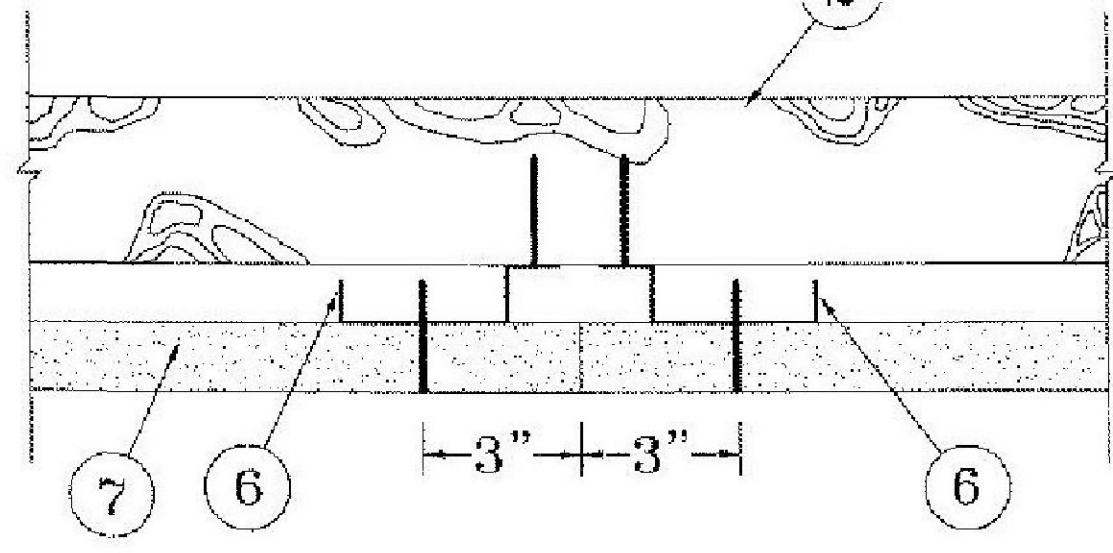
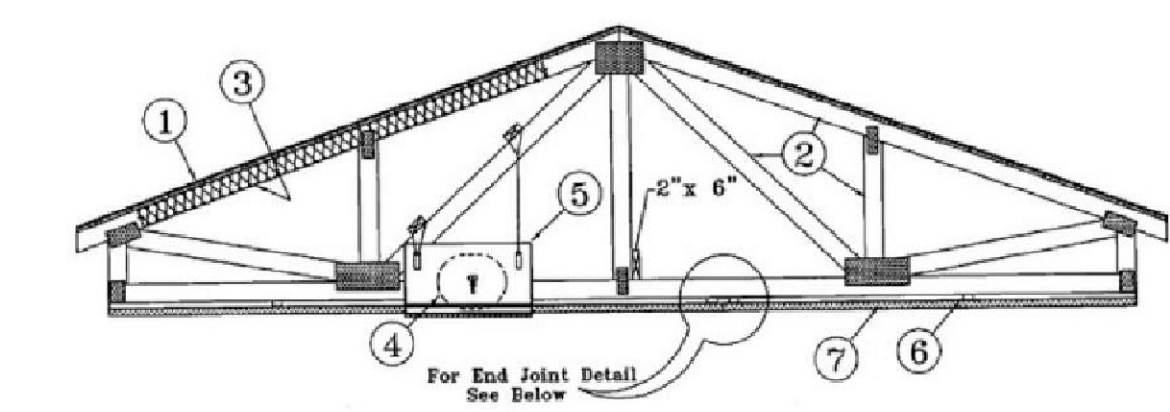
April 05, 2018

Unrestrained Assembly Rating – 1 Hr

Finish Rating – 25 Min (See Items 3 or 3A)

**This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used – See Guide BXXIV or BXXV2**

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



### Alternate Insulation Placement

1. **Roofing System\*** – Any UL Class A, B or C Roofing System (TGFlU) or Prepared Roof Covering (TFV2) acceptable for use with nominal 15/32 in. thick wood structural panels, min. grade “C-D” or “Sheathing,” nom 15/32 in. thick wood structural panels secured to trusses with No. 16 cold-formed steel nails spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 60 nails. Construction adhesive may be used with either the nails or staples.

2. **Trusses** – Pitched or parallel chord wood trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically or horizontally. Truss members secured together with min. 0.036 in. thick galy steel plates. Plates have 5/16 in. long tooth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split-tooth type plate. Each tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approximately 7/8 in. centers with four rows of teeth per inch of plate width. Where the truss intersects with the interior face of the exterior walls, the min truss depth shall be 2-1/4 in. with a min roof slope of 3/12 and a min. area in the plane of the truss of 21 sq/ft. Where the truss intersects with the interior face of the exterior walls, the min truss depth may be reduced to 3 in. If the batts and blankets (Item 3) are used as shown in the above illustration (Alternate Insulation Placement) and are firmly packed against the intersection of the bottom chords and the plywood sheathing.

3. **Batts and Blankets\*** – (Optional) – Required when Item 6B is used – Glass fiber insulation, secured to the wood structural panels with staples spaced 12 in. OC or to the trusses with 0.060 in. diam galv steel wires spaced 12 in. OC. Any glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance, having a min density of 0.5 pcf. As an option, the insulation may be fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane when resilient channels and gypsum board attachment is modified as specified in Items 6 and 7. When **Steel Framing Members** (Item 6B) are used, max 3-1/2 in. thick insulation shall be draped over the furring channels (Item 6A) and gypsum board ceiling membrane, and friction-fitted between trusses and Steel Framing Members (Item 6B). The finished ratings have only been determined when the insulation is secured to the ceiling.

3A. **Fiber, Sprayed\*** – As an alternate to Item 3 (not evaluated for use with Item 6B) – Any thickness of spray-applied cellulose insulation material, having a min density of 0.5 lb/ft<sup>3</sup>, applied with water, over the resilient channel/gypsum board ceiling membrane when resilient channels and gypsum board attachment is modified as specified in Items 6 and 7. Fiber, Sprayed is applied with moisture in accordance with the application instructions supplied with the product. The finish rating when Fiber Sprayed is used has not been determined. Alternate application method: The fiber is applied without water or adhesive in accordance with the application instructions supplied with a minimum density of 0.5 lb/ft<sup>3</sup> over the resilient channel/gypsum board ceiling membrane when resilient channels and gypsum board attachment is modified as specified in Items 6 and 7. Alternate application method: The fiber is applied without water or adhesive to a nominal density of 3.5

lb/ft<sup>3</sup> behind netting (Item 9) stapled to the rafters. The netting is stapled at both lower edges of the rafters creating a cavity to accept the cellulose fiber.

**U S GREENFIBER L L C** – INS735B, INS745 for use with wet or dry application. INS105LD, INS515LD, INS541LD, INS735, INS745, INS765LD, and INS767LD are to be used for dry application only.

3B. **Foamed Plastic\*** – (As an alternate to Item 3 or 3A, Not Shown) – Spray foam insulation applied directly to the underside of the underside of the roofing system (Item 1). Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft<sup>3</sup> density. When spray foam insulation is used, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) installed at 6 in. OC to allow for maximum 3 in. spacing off ends of the gypsum board joints. Gypsum board (Item 7) to be installed using 1-1/4 in. long Type 5 screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 5 through 5H) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 6A through 6F.

**SES FOAM INC** – Sucraseal 0.5 lb

3C. **Cavity Insulation - Batts and Blankets\* or Fiber, Sprayed\*** – (As described above) in Items 3 and 3A – (For Use with Item 7B, Not Shown) – Min. 3-1/2 in thick with no limit on maximum thickness fitted in the concealed space, draped over the resilient channel (Item 6G)/gypsum board (Item 7B) ceiling membrane.

3D. **Foamed Plastic\*** – (As alternate to Item 3, 3A, or 3B, Not Shown) – Spray foam insulation applied directly to the underside of the roofing system (Item 1). Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft<sup>3</sup> or 2.0 lb/ft<sup>3</sup> density, depending on the product installed. When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type 5 screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 5 through 5H) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 6A through 6F.

**BAF CORP** – Enerflex® NM, Enerflex® G, Fc178®, Sprayflex® 178, Sprayflex® 81206, Wallflex® 200, Wallflex® US, Wallflex® US-N, and Wallflex® HP+

4. **Air Duct\*** – Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.

5. **Ceiling Damper\*** – Max nom area, 324 sq in. Max square size, 18 in. by 18 in. Rectangular sizes not to exceed 324 sq in. with a max width of 18 in. Max damper height is 14 in. Installed in accordance with manufacturers installation instructions provided with the damper. Max damper openings not to exceed 162 sq in. per 100 sq ft of ceiling area.

**C&S AIR PRODUCTS** – Model RD-S21

**POTTOFF** – Model CFD-521

5A. **Alternate Ceiling Damper\*** – Max nom area, 195 sq in. Max square size, 14 in. by 14 in. Rectangular sizes not to exceed 196 sq in. with a max width of 26 in. Max overall damper height is 7 in. Installed in accordance with the manufacturer's installation instructions provided with the damper. Max damper openings not to exceed 98 sq in. per 100 sq ft of ceiling area.

**C&S AIR PRODUCTS** – Model RD-S21-BT

**POTTOFF** – Model CFD-521-BT

5B. **Alternate Ceiling Damper\*** – Max nom area shall be 256 sq in. with the length not to exceed 24 in. and the width not to exceed 20 in. Max height of damper shall be 17 in. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturer's installation instructions provided with the damper. A steel grille shall be installed in accordance with installation instructions.

**POTTOFF** – Models CFD-521-IP, CFD-521-NP

5C. **Alternate Ceiling Damper\*** – Ceiling damper & fan assembly. Max nom area shall be 75 sq in. with the length not to exceed 8-9/16 in. and the width not to exceed 8-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 35 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

**DELTA ELECTRONICS INC** – Models CRD2, GBR-CRD, TRG-CRD

5D. **Alternate Ceiling Damper\*** – Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 75 sq in. with the length not to exceed 9-1/4 in. and the width not to exceed 8-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 45 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

**DELTA ELECTRONICS INC** – Model SIG-CRD

5E. **Alternate Ceiling Damper\*** – Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 131 sq in. with the length not to exceed 11-1/16 in. and the width not to exceed 11-7/8 in. Aggregate damper openings shall not exceed 55 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

**DELTA ELECTRONICS INC** – Model SMT-CRD

5F. **Alternate Ceiling Damper\*** – Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 103 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 10-1/8 in. Aggregate damper openings shall not exceed 52 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

**PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA** – Model PC-RD05C5

5G. **Alternate Ceiling Damper\*** – Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 113 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 11-7/8 in. Aggregate damper openings shall not exceed 57 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

**BROAN-NUTONE L L C** – Model RDRIWT

5H. **Alternate Ceiling Damper\*** – Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 79 sq in. with the length not to exceed 10 in. and the width not to exceed 7-15/16 in. Aggregate damper openings shall not exceed 40 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A metallic grille shall be installed in accordance with installation instructions.

**BROAN-NUTONE L L C** – Models RD01 and RDH

5I. **Alternate Ceiling Damper\*** – Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in. Aggregate damper openings shall not exceed 44 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

**BROAN-NUTONE L L C** – Model RDHWT

6. **Furring Channels** – Resilient channels formed of 25 MSG galv steel. Installed perpendicular to the trusses (Item 2), spaced a max of 16 in. OC when no insulation (Item 3 or 3A) is fitted in the concealed space, or a max of 12 in. OC when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane, or when insulation (Item 3B or 3D) is applied to the underside of the roofing system (Item 1). Two courses of resilient channel positioned 6 in. OC at wallboard butt-joints (3 in. from each end of wallboard). Channels oriented opposite at wallboard butt-joints. Channel splices overlapped 4 in. beneath wood trusses. Channels secured to each truss with 1-1/4 in. long Type 5 screws.

6A. **Steel Framing Members\*** – (Not Shown) – As an alternate to Item 6, furring channels and Steel Framing Members as described below:

a. **Furring Channels** – Formed of No. 25 MSG galv steel, 2-9/16 in. by 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to trusses when no insulation (Items 3 or 3A) is fitted in the concealed space or 12 in. OC when insulation (Items 3 or 3A) is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane or 24 in. OC when insulation (Items 3 or 3A) is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane and a second layer of gypsum board is attached as described in Item 7 for steel framing members. Channels secured to each truss with 2-9/16 in. wide furring channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.

b. **Steel Framing Members** – Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC perpendicular to furring channels. Gypsum board secured to furring channels using 1 in. long Type 5 bugle head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 72 in. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in., on each end, and spaced approximately 2 in. in from joint. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Butted joint furring channels shall be attached with a RESILMOUNT Sound Isolation Clip secured to underside of every truss that is located over the butt joint. Over all Gypsum Board side joints, approximately 20 in. lengths of furring channel shall be installed parallel to trusses (Item 2) between main furring channels. Side joint furring channels shall be attached to underside of the joint with RESILMOUNT Sound Isolation Clips – located approximately 2 in. from each end of the approximate 20 in. length of channel. Both Gypsum Boards at side joints fastened into channels with screws spaced 8 in. OC, approximately 1/2 in. from joint edge.

When **Steel Framing Members** (Item 6B) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels using 1 in. long Type 5 bugle head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two support furring channels shall be spaced approximately 3 in. in from end joint. Screw spacing along the gypsum board butt joint and along with additional channels shall be 8 in. OC. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that runs between. Butted joint furring channels shall be attached with one RESILMOUNT Sound Isolation Clip at each end of the channel.

min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7.

**PAC INTERNATIONAL L L C** – Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

6B. **Steel Framing Members\*** – (Not Shown) – As an alternate to Items 6 and 6A.

a. **Furring Channels** – Hat-shaped furring channels, 7/8 in. deep by 2-5/8 in. wide at the base and 1-1/4 in. wide at the face, formed from No. 25 ga. galv steel, spaced max 16 in. OC perpendicular to the trusses and Cold Rolled Channels (Item 6B). Furring channels secured to Cold Rolled Channels at every intersection with a 1/2 in. pan head self-drilling screw through each furring channel leg. Ends of adjoining channels overlapped 4 in. and tied together with two double strand of No. 18 SWG galv steel wire ties, one at each end of overlap. Supplemental furring channels at base layer and outer layer gypsum board butt joints are not required. Batts and Blankets draped over furring channels as described in Item 3. Two layers of gypsum board attached to furring channels as described in Item 7.

b. **Cold Rolled Channels** – 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to trusses, friction-fitted into the channel caddy on the Steel Framing Members (Item 6B). Adjoining lengths of cold rolled channels lapped min. 6 in. and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.

c. **Blocking** – Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 2 by 4 in. lumber (Blocking), min. 6 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the truss (Item 2) at the top and bottom of the blocking at each Steel Framing Member (Item 6B) location.

d. **Steel Framing Members** – Hangers spaced 48 in. OC, max along truss, and secured to the blocking (Item 6C) on alternating trusses with a single 5/16 in. by 2 in. pan head lag bolt or four 1/4 in. drywall screws through mounting holes) on the hanger bracket. The two 1/4 in. long steel bolts on the hanger are embedded in the side of the blocking. Hanger positioned on blocking and leveling bolt height adjusted such that furring channels are flush with bottom of trusses before gypsum board installation. Spring gauge of hanger chosen per manufacturer's instructions.

**KINETICS NOISE CONTROL INC** – Type ICV.

6C. **Steel Framing Members\*** – (Not Shown) – As an alternate to Items 6, 6A and 6B.

a. **Furring Channels** – Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep installed perpendicular to wood structural members. Channels spaced a max of 24 in. OC when no insulation (Item 3 or 3A) is fitted in the concealed space or a max of 12 in. OC when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the furring channels secured to trusses as described in Item 6B. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire near each end of overlap.

b. **Steel Framing Members** – Used to attach furring channels (Item 6A) to trusses (Item 2). Clips secured to the bottom chord of each truss (24 in. OC) with one No. 8 by 1-1/2 in. long coarse drywall screw through center grommet. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item 6C. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7.

**PLITEQ INC** – Type Genie Clip

6D. **Steel Framing Members\*** – (Not Shown) – As an alternate to Items 6, 6A, 6B and 6C.

a. **Main runners** – Installed perpendicular to trusses – Nom 10 or 12 long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft OC. Main runners with a min of 1/2 in. from bottom chord of trusses with 12 SWG galv steel wire. Wires located a max of 48 in. OC.

b. **Cross tees or channels** – Nom 4 ft long, 15/16 in. or 1-1/2 in. wide face cross tees or channels, nom 4 ft long, 1-1/2 wide face, installed perpendicular to the main runners, spaced 16 in. OC. Additional cross tees or channels used at 8 in. from each side of butted gypsum board end joints. The cross tees or channels may be riveted or screw-attached to the wall angle or channel to facilitate the ceiling installation.

c. **Wall angle or channels** – Used to support steel framing member ends and for screw attachment of the gypsum wallboard – Min 0.035 in. thick panel or galvanized steel angle with 1 in. legs or min. 0.016 in. thick painted or galvanized steel channel with a 1 by 1-1/2 by 1 in. profile, attached to walls at perimeter of ceiling with fasteners 16 in. OC.

**CGC INC** – Type DGL or RX

**USG INTERIORS LLC** – Type DGL or RX

6E. **Alternate Steel Framing Members\*** – (Not Shown) – As an alternate to Items 6, 6A, 6B, and 6C, furring channels and Steel Framing Members as described below.

a. **Furring Channels** – Formed of No. 25 MSG galv steel, 2-5/8 in. wide by 7/8 in. deep, spaced 24 in. OC, perpendicular to trusses. When insulation, Items 3 or 3A is used, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to joists as described in Item b.

b. **Steel Framing Members** – Used to attach furring channels (Item a) to the wood trusses (Item 2). Clips secured to the bottom chord of the trusses with one 2 in. coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 7.

**STUDCO BUILDING SYSTEMS** – RESILMOUNT Sound Isolation Clips – Type A237 or A237R

6F. **Steel Framing Members\*** – (Not Shown) – As an alternate to Items 6 through 6E. Not for use with Items 3 or 3A. Main runners 12 ft long, spaced 24 in. OC. Cross tees 8 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board and joint with butted gypsum board end joints centered between cross tees spaced 8 in. OC. The main runners and cross tees may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

**USG INTERIORS LLC** – Type DGL or RX

6G. **Resilient Channels** – For Use With Item 7B - Formed from min 25 MSG galv steel installed perpendicular to trusses and spaced 16 in. OC. Channels secured to each truss with 1-5/8 in. long Type 5 bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, oriented opposite each gypsum panel end joint. Additional channels shall extend min 6 in. beyond each side edge of panel. Insulation, Item 3C is applied over the resilient channel/gypsum panel ceiling membrane.

7. **Gypsum Board\*** – One layer of nom 5/8 in. thick by 48 in. wide boards, installed with long dimension parallel to trusses, attached to the resilient channels using 1 in. long Type 5 bugle-head screws. Screws spaced a max of 12 in. OC along butted end joints and in the field when no insulation (Item 3 or 3A) is fitted in the concealed space, or a max of 8 in. OC along butted end-joints and in the field when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane. When insulation (Item 3B or 3D) is installed in the concealed space, spray-applied to the underside of the roofing system (Item 1), screws are spaced a max of 8 in. OC along resilient channels, fasteners are increased in length to 1-1/4 in. and gypsum board butt joints shall be staggered min. 2 ft within the assembly, and occur between the main furring channels.

When **Steel Framing Members** (Item 6A or 6C) are used, sheets installed with long dimension perpendicular to furring channels and side joints of sheet located beneath trusses. Gypsum board screws are driven through channel spaced 12 in. OC in the field when no insulation (Item 3 or 3A) is fitted in the concealed space, or 8 in. OC in the field when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane. Gypsum board butt joints shall be staggered min. 2 ft within the assembly, and occur between the main furring channels. At the gypsum board butt joints, each end of the gypsum board shall be supported by a single length of furring channel equal to the width of the wallboard plus 6 in. on each end. The furring channels shall be spaced approximately 2-1/2 in. OC, and be attached to the trusses with one clip at each end of the channel. Screw spacing along the butt joint to attach the gypsum board to the furring channels shall be 8 in. OC. Second (outer) layer of gypsum board required when furring channels (Item 6A, A) are spaced 24 in. OC and insulation is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane. Outer layer of gypsum board attached to the furring channels using 1-5/8 in. long Type 5 bugle-head screws spaced 8 in. OC at butted joints and 12 in. OC in the field. Butted end joints of outer layer to be offset a minimum of 8 in. from base layer and joints. Butted side joints of outer layer to be offset minimum 18 in. from butted side joints of base layer.

When **Steel Framing Members** (Item 6B) are used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels using 1 in. long Type 5 bugle head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field of the board. Butted end joints centered on the continuous furring channels. Butted base layer and joints to be offset a min of 16 in. in adjacent courses. Outer layer attached to the furring channels using 1-5/8 in. long Type 5 bugle head steel screws spaced 8 in. OC at butted end joints and 12 in. OC in the field. Butted end joints centered on the continuous furring channels and offset a min of 16 in. from butted end joints of base layer. Butted side joints of outer layer to be offset min. 16 in. from butted side joints of base layer.

When **Steel Framing Members** (Item 6C) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type 5 bugle-head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 72 in. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in., on each end, and spaced approximately 2 in. in from joint. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Butted joint furring channels shall be attached with a RESILMOUNT Sound Isolation Clip secured to underside of every truss that is located over the butt joint. Over all Gypsum Board side joints, approximately 20 in. lengths of furring channel shall be installed parallel to trusses (Item 2) between main furring channels. Side joint furring channels shall be attached to underside of the joint with RESILMOUNT Sound Isolation Clips – located approximately 2 in. from each end of the approximate 20 in. length of channel. Both Gypsum Boards at side joints fastened into channels with screws spaced 8 in. OC, approximately 1/2 in. from joint edge.

When **Steel Framing Members** (Item 6E) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels using 1 in. long Type 5 bugle head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two support furring channels shall be spaced approximately 3 in. in from end joint. Screw spacing along the gypsum board butt joint and along with additional channels shall be 8 in. OC. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that runs between. Butted joint furring channels shall be attached with one RESILMOUNT Sound Isolation Clip at each end of the channel.

When alternate **Steel Framing Members** (Item 6F) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board sheets installed with long dimension (side joints) perpendicular to the 6 ft long cross tee and side joints staggered min 4 ft and centered between cross tees which are spaced 9 in. OC. Gypsum board side joints may occur beneath or between main runners. Prior to installation of the gypsum board sheets, backer strips consisting of nom 7-3/4 in. wide piece of gypsum board are to be laid atop the cross tee flanges and centered over each butted end joint location. The backer strips are to be secured to the flanges of the cross tee at opposite corners of the backer strip with hold down clips to prevent the backer strips from being uplifted during screw-attachment of the gypsum board sheets. Gypsum board fastened to cross tees with 1 in. drywall screws spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. The butted end joints are to be secured to the backer strip with No. 10 by 1-1/2 in. long Type 6 laminating screws located 1 in. from each side of the butted end joint and spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board.

**CGC INC** – Types C, IP-X2, IPCAR

**UNITED STATES GYPSUM CO** – Types C, IP-X2, IPCAR

**USG BORAL DRYWALL SFZ LLC** – Type C

**USG MEXICO SA DE CV** – Types C, IP-X2, IPCAR

7A. **Gypsum Board\*** – For use with Steel Framing Members (Item 6D) when Batts and Blankets (Item 3) are not used - One layer of nom 5/8 in. thick by 48 in. wide boards, installed with long dimension parallel to the main runners. Gypsum board fastened to each cross tee or channel with five wallboard screws, with one screw located at the midpoint of the cross tee or channel, one screw located 12 in. from and on each side of the cross tee or channel mid span and one screw located 1-1/2 in. from each gypsum board side joint. Except at wallboard end joints, wallboard screws shall be located on alternating sides of cross tee flanges. At gypsum board end joints, gypsum board screws shall be located 1/2 in. from the joint. Gypsum board fastened to main runners with wallboard screws 1/2 in. from side joints, midway between intersections with cross tees or channels (16 in. OC). End joints of adjacent gypsum board sheets shall be staggered not less than 32 in. Gypsum board sheets screw attached to long wall angle with wallboard screws spaced 12 in. OC, truss with side joints described in Item 7. For use with **Steel Framing Members** (Item 6D) when **Batts and Blankets** (Item 3) are used - Ratings limited to 1 hour; installed with long dimension parallel to trusses. Screws along sides and ends of boards spaced 3/8 to 1/2 in. from board ends. End joints of the sheets shall be staggered with spacing between joints on adjacent boards not less than 4 ft OC.

**CGC INC** – Type C or IP-X2

**UNITED STATES GYPSUM CO** – Type C or IP-X2

**USG BORAL DRYWALL SFZ LLC** – Type C

**USG MEXICO SA DE CV** – Type C or IP-X2

7B. **Gypsum Board\*** – For use with Items 3C and 6G. Nom 5/8 in. thick, 48 in. wide gypsum panels installed with long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in. long Type 5 bugle head steel screws spaced 8 in. OC and located a min of 1/2 in. from side joints and 3 in. from end joints. Finish Rating with this ceiling system is 20 min.

**UNITED STATES GYPSUM CO** – Type ULIX

8. **Finishing System** – (Not Shown) – Vinyl, dry or premixed joint compound, applied in two coats to joints and screw heads; paper tape, 2 in. wide, installed with long dimension parallel to trusses. In first coat, min. 3/16 in. thick, veneer plaster may be applied to the entire surface of gypsum board. **Alternate Ceiling Membrane** – Not Shown.

9. **Netting** – Fibrous, woven netting material fastener to underside of each joint with staples, with side joints overlapped.

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

SMA

Serra Marko Associates

Architects

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Design No. U311

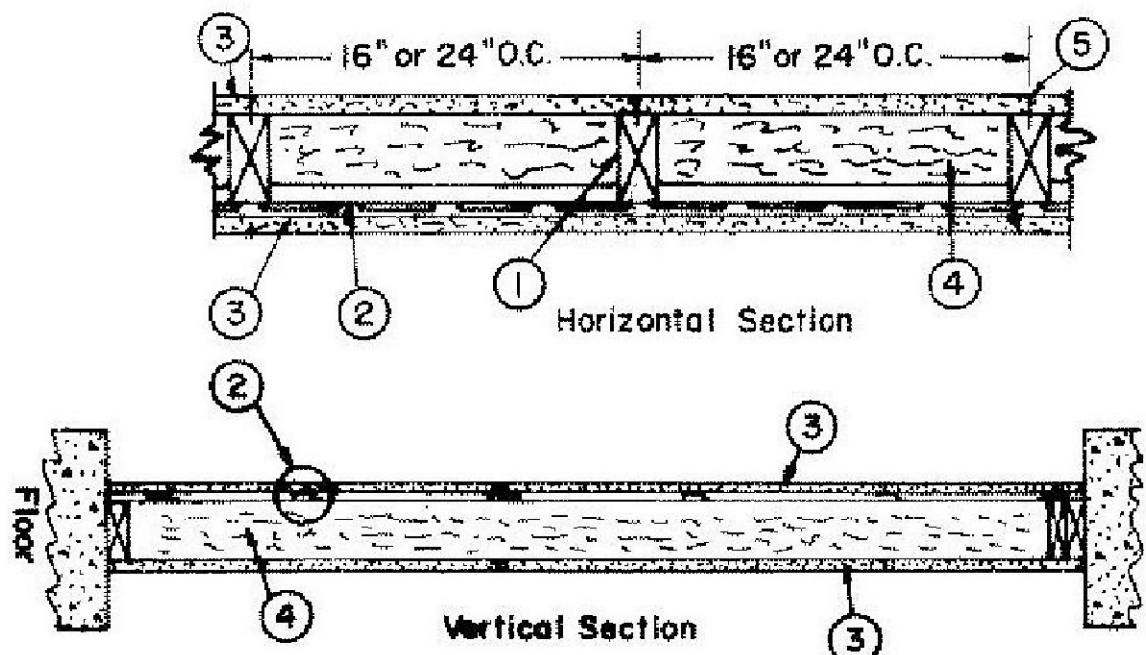
August 02, 2017

Bearing Wall Rating – 1 HR.

Finish Rating – 23 Min.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used – See Guide BXIV or BXIV2.

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. **Wood Studs** – Nom 2 by 4 in., spaced 16 or 24 OC. Effectively cross braced
2. **Resilient Channel** – 25 MSG galv steel. Resilient channels spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long Type W coarse thread gypsum panel steel screws.
- 2A. **Steel Framing Members\*** – (Optional, Not Shown) – As an alternate to Item 2, furring channels and Steel Framing Members as described below:
- a. **Furring Channels** – Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel.
- b. **Steel Framing Members\*** – Used to attach furring channels (Item a) to studs (Item 1). Clips spaced 48 in. OC, and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. RSC-1 clip for use with 2-9/16 in. wide furring channels. RSC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.
- PAC INTERNATIONAL L L C – Types RSC-1, RSC-1 (2.75).

- 2B. **Steel Framing Members\*** – Furring channels and Steel Framing Members as described below:
- a. **Furring Channels** – Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.
- b. **Steel Framing Members\*** – Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.
- PLITEQ INC – Type Genie Clip

- 2C. **Steel Framing Members\*** – (Optional, Not Shown) – Furring channels and Steel Framing Members as described below:
- a. **Furring Channels** – Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 3.
- b. **Steel Framing Members\*** – Used to attach furring channels (Item 2Ca) to studs. Clips spaced 48 in. OC, and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.
- STUDCO BUILDING SYSTEMS – RESILMOUNT Sound Isolation Clips – Type A237R

3. **Gypsum Board\*** – 5/8 in. thick, 4 ft wide. Screw attached on one side of wall to furring channels with 1 in. long, self-drilling, self-tapping steel screws spaced 12 in. OC, vertical joints located midway between studs and back blocked with furring channels, attached with 1 in. long, self-drilling, self-tapping screws, spaced 12 in. OC, along each edge. Gypsum board on opposite side of wall attached directly to studs with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced 12 in. OC. Vertical joints shall be located over studs on this side of the wall.
- AMERICAN GYPSUM CO – Types AG-C

CERTAINTEEED GYPSUM INC – Type FRPC, Type C

CGC INC – Types C, IP-X2, IPC-AR

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C – Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C – Types S, DAPC, TG-C

NATIONAL GYPSUM CO – Types -eXP-C, FSK-C, PSW-C, PSW-G

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM – Type C or PG-C

SAINT-GOBAIN GYPROC MIDDLE EAST FZE – Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTV/Air, Gyproc FireStop MR ACTV/Air, Gyproc FireStop M2TECH ACTV/Air, Gyproc Duraline, Gyproc Duraline MR, Gyproc Duraline M2TECH, Gyproc Duraline ACTV/Air, Gyproc Duraline MR ACTV/Air, Gyproc Duraline M2TECH ACTV/Air

THAI GYPSUM PRODUCTS PCL – Type C

UNITED STATES GYPSUM CO – Types C, IP-X2, IPC-AR

USG BORAL ZAWAWI DRYWALL L L C SFZ – Type C

USG MEXICO S A DE C V – Types C, IP-X2, IPC-AR

4. **Batts and Blankets\*** – 3-1/2 in. thick mineral wool batts, placed to fill interior of wall, attached to the 4-in. face of the studs with staples placed 24 in. OC.

JOHNS MANVILLE  
ROCK WOOL MANUFACTURING CO – Delta Board.

ROCKWOOL – Acoustical Fire Batts

THERMAFIBER INC – Type SAFB, SAFB FF.

4A. **Glass Fiber Insulation** – (As an alternate to Item 4) – 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, friction-fitted to fill the interior of the wall. See **Batts and Blankets** (BOW or BZD) Categories for names of Classified companies.

4B. **Fiber, Sprayed\*** – As an alternate to Batts and Blankets (Item 4) – Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft<sup>3</sup>. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft<sup>3</sup>, in accordance with the application instructions supplied with the product.

U S GREENFIBER L L C – IN6733A, IN6745 for use with wet or dry application. IN6510LD, IN6515LD, IN6541LD, IN6733, IN6745, IN6765LD and IN6770LD are to be used for dry application only

4C. **Fiber, Sprayed\*** – As an alternate to Items 4, 4A, and 4B – Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 4.58 lb/ft<sup>3</sup>.

NU-WOOL CO INC – Cellulose Insulation

4D. **Fiber, Sprayed\*** – As an alternate to Batts and Blankets (Item 4) – Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.10 lb/ft<sup>3</sup>.

INTERNATIONAL CELLULOSE CORP – Celbar-RL

5. **Joints and Screw Heads** – Wallboard joints covered with paper tape and joint compound. Screw heads covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with joints reinforced with paper tape.

6. **Wall and Partition Facings and Accessories\*** – (Optional, Not Shown) – Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM – Type QuietRock QR-500 and QR-510

7. **Mineral and Fiber Board** – (Optional, Not Shown) – 1/2 in. thick, 4 ft wide, square edge fiber boards applied vertically to studs on the side of the wood framing without the resilient channels, in between the wood framing and the UL

Classified gypsum board (Item 3). Fiber boards installed with 1-1/4 in. long, Type W, bugle head, coarse thread gypsum board screws spaced 12 in. OC max, with the last screws spaced 2 in. and 6 in. from edge of board. Gypsum board (Item 3) installed horizontally or vertically and fastened through the fiber boards to wood framing with 2 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. Gypsum board joints staggered from fiber board joints. Fiber boards not evaluated or intended as a substitute for the required layer of UL Classified Gypsum Board.

BLUE RIDGE FIBERBOARD INC – SoundStop

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

SMA

Serra Marko Associates

Architects

189 E. Big Beaver, Ste 106

Troy, MI 48083

s-m-associates.com

248.457.6903

info@s-m-associates.com

PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATION OF ALL DIMENSIONS.

JOB NO.	15-0353
D,B/C,B	R,A./P,D
ISSUANCES	
NO DESCRIPTION	DATE
1 REVIEW SET	12/23/21

SHEET TITLE  
FIRE RATED  
ASSEMBLIES

DWG. NO.

A0.0.6

of



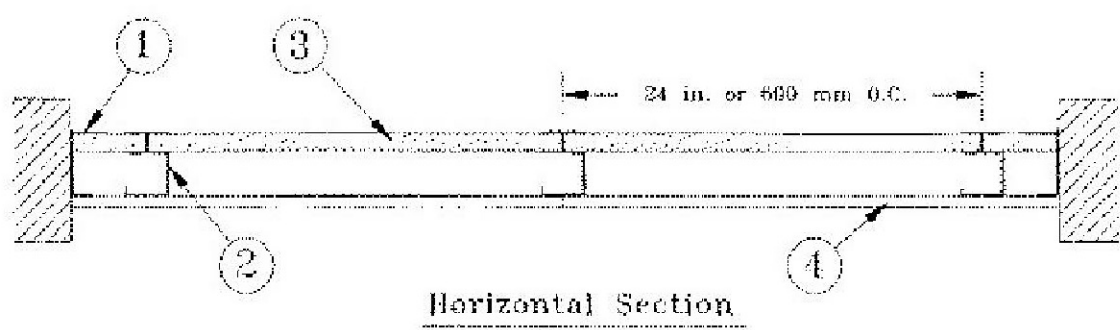
## Design No. U415

March 06, 2018

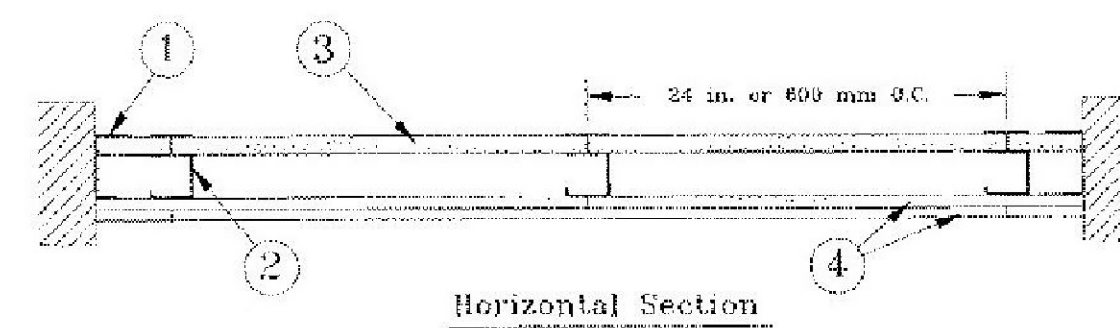
Nonbearing Wall Ratings – 1, 2, 3 or 4 Hr

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

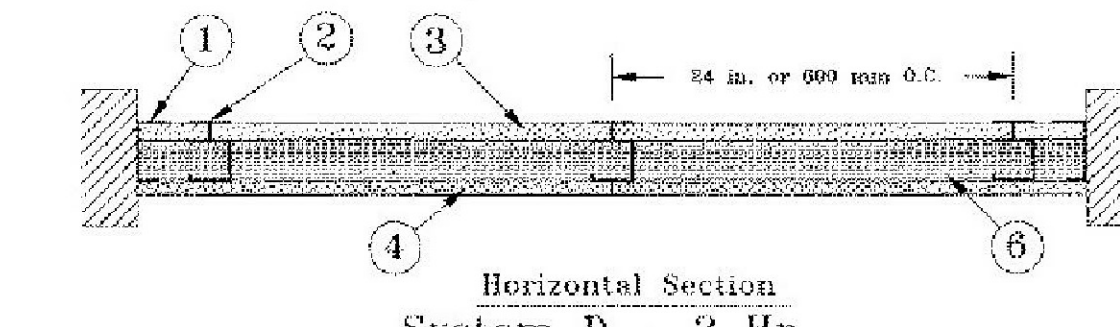
System A – 1 Hr.



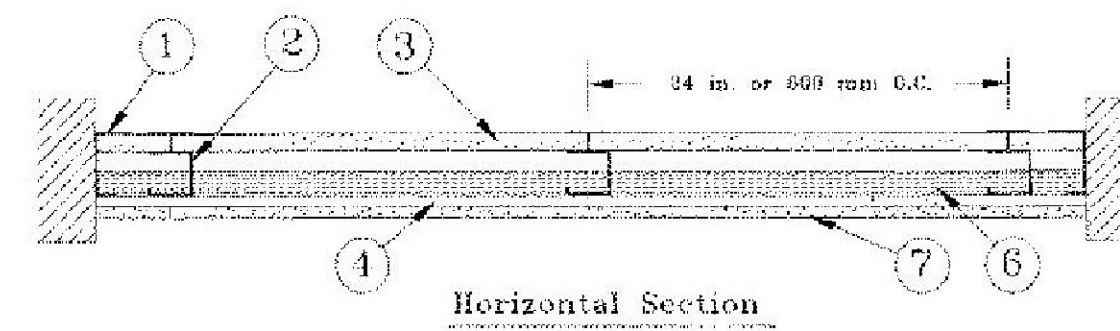
System B – 2 Hr.



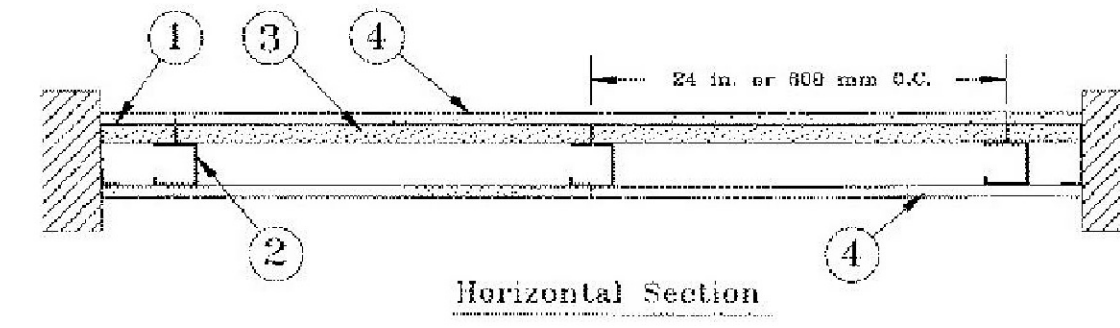
System C – 2 Hr.



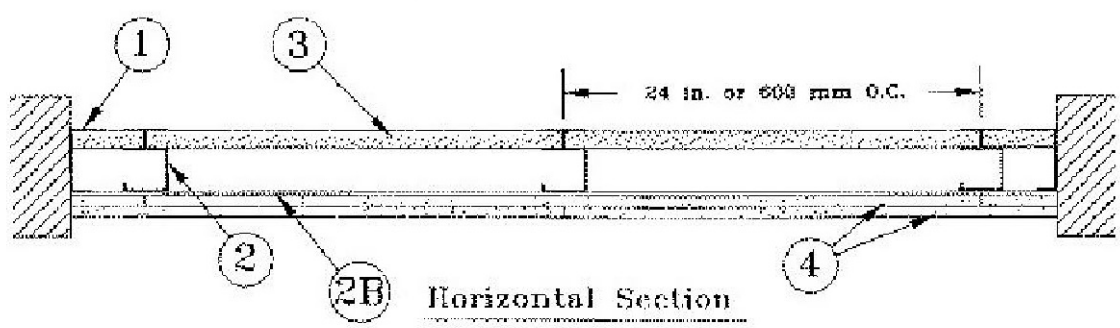
System D – 2 Hr.



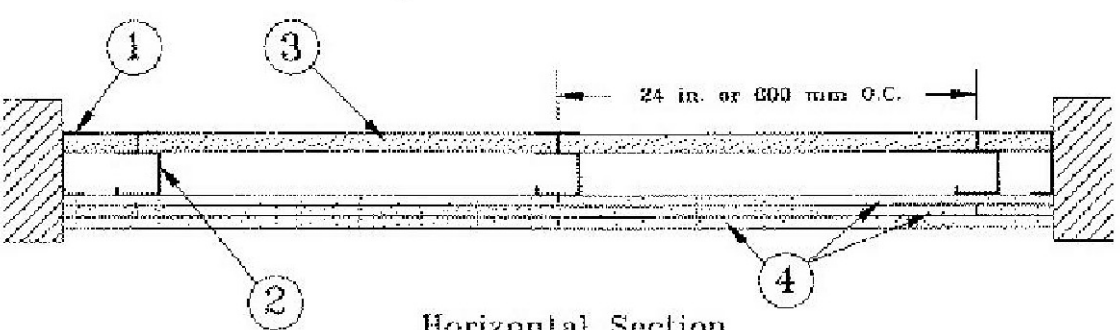
System E – 2 Hr.



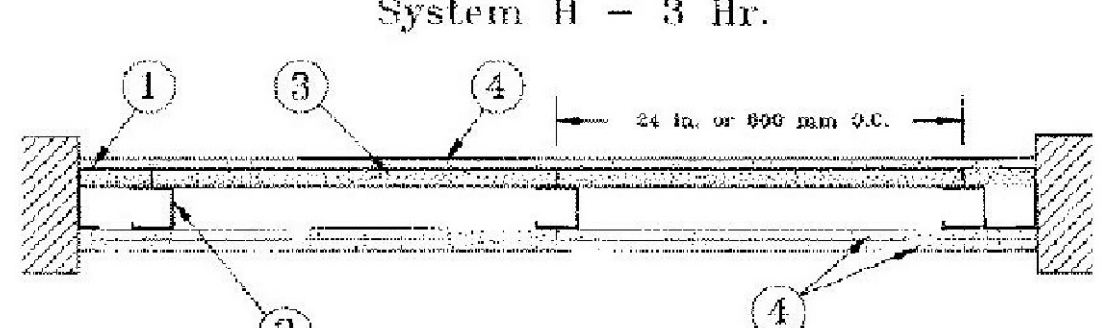
System F – 2 Hr.



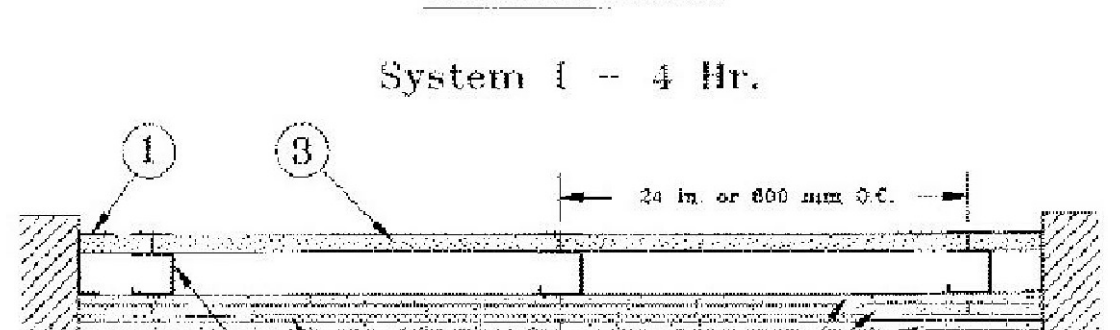
System G – 3 Hr.



System H – 3 Hr.



System I – 4 Hr.



1. **Floor, Side and Ceiling Runners** – "J" shaped runner, min 2-1/2 in. deep (min 4 in. deep when System C is used), with unequal legs of 1 in. and 2 in., fabricated from min 24 MSG (min 20 MSG when Item 4A, 4B, 4C, 4D or 7 are used) galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC. "E" shaped studs (Item 2A) may be used as side runners in place of "J" shaped runners.

2. **Steel Studs** – "C" shaped studs, min 2-1/2 in. deep (min 4 in. deep when System C is used), fabricated from min 25 MSG (min 20 MSG when Items 2D, 4A, 4B, 4C, 4D or 7 is used) galv steel. Cut to lengths 3/8 to 1/2 in. less than floor-to-ceiling height and spaced 24 in. OC along vertical edges and 12 in. OC when Items 4A, 4B, 4C, or 4D are used).

2A. **Steel Studs** – (Not Shown) – "E" shaped studs installed back to back in place of "C" shaped studs (Item 2) "E" shaped studs secured together with steel screws spaced a maximum 12 in. OC. Fabricated from min 25 MSG (min 20 MSG when Item 2D, 4A, 4B or 7 is used) galv steel, min 2-1/2 in. deep (min 4 in. deep when System C is used), with one leg 1 in. long and two legs 3/4 in. long. Shorter legs 1 in. apart to engage gypsum liner panels. Cut to lengths 3/8 to 1/2 in. less than floor to ceiling heights.

2B. **Furring Channels** – (Optional, Not Shown) – For use with single or double layer systems. Resilient furring channels fabricated from min 25MSG corrosion protected steel, installed horizontally, and spaced vertically a max 24 in. OC. Flange portion of channel attached to each intersecting "C" or "E" stud on side of stud opposite the 1 in. liner panels with 1/2 in. long Type S or S-12 pan-head steel screws. When furring channels are used, wallboard to be installed vertically only. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7).

2C. **Furring Channels** – For use with System 1 "Hat" shaped, 25 MSG galv steel furring channels attached directly over the inner layers of wallboard to each stud with 2 in. long Type S pan head steel screws. Screws alternate from top flange to bottom flange at each stud intersection. Furring channels spaced vertically max 24 in. OC.

2D. **Steel Framing Members** – (Optional, Not Shown) – For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B) or cementitious backer units (Item 7).

a. **Furring Channels** – Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 5. Gypsum board installed vertically only and attached to furring channels as described in Item 4.

b. **Steel Framing Members**\* – Used to attach furring channels (Item 2Da) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC, and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center gnomat. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (C-75) clip for use with 2-23/32 in. wide furring channels.

PAC INTERNATIONAL L L C – Types KSIC-1, RSIC-1 (2.75)

2E. **Steel Framing Members**\* – (Optional, Not Shown) – Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B), Type X-Ray Shielded Gypsum (Item 4C), Type RPP-Lead Lined Drywall (Item 4F) or cementitious backer units (Item 7).

a. **Furring Channels** – Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 5. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members**\* – Used to attach furring channels (Item 2Ea) to studs. Clips spaced 24 in. OC, and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.

STUDCO BUILDING SYSTEMS – RESILMOUNT Sound Isolation Clips – Type A237R

2F. **Steel Framing Members**\* – (Optional, Not Shown) – For use with single or double layer systems. Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B), Type X-Ray Shielded Gypsum (Item 4C), Type RPP-Lead Lined Drywall (Item 4F) or cementitious backer units (Item 7).

a. **Furring Channels** – Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 5. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members**\* – Used to attach furring channels (Item 2Fa) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC. GENCLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center gnomat. Furring channels are friction fitted into clips.

PLITEC INC – Type GENCLIP

2G. **Steel Framing Members**\* – (Optional, Not Shown) – Furring channels and Steel Framing Members as described below. Not to be used with Type FRX-G gypsum wallboard, Type RB-LBG (Item 4A), Type Nelco (Item 4B), Type X-Ray Shielded Gypsum (Item 4C), Type RPP-Lead Lined Drywall (Item 4F) or cementitious backer units (Item 7).

a. **Furring Channels** – Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 5. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members**\* – Used to attach furring channels (Item 2Ga) to studs. Clips spaced 24 in. OC, and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

RESUPOL AMERICA – Type SoundClip

3. **Gypsum Board**\* – Gypsum liner panels, nom 1 in. thick, 24 in. or 609 mm (for metric spacing) wide. Panels cut 1 in. less in length than floor to ceiling height. Vertical edges inserted in "H" portion of "C" shaped studs or the gap between the two 3/4 in. legs of the "E" studs. Free edge of end panels attached to long leg of vertical "J" runners with 1-5/8 in. long Type S steel screws spaced not greater than 12 in. OC. When wall height exceeds liner panel length, liner panel may be buttled to extend to the full height of the strip. Horizontal joints need not be backed by steel framing. In System D, lead batten strips are staggered min 36 in. Butt joints backed with 6 in. by 22 in. strips of 3/4 in. thick gypsum wallboard (Item 4D). Wallboard strips centered over butt joints and secured to liner panels with six 1-1/2 in. long Type G steel screws, three screws along the 22 in. dimension at the top and bottom of the strips.

CGC INC – Type SLX

UNITED STATES GYPSUM CO – Type SLX

USG BORAL DRYWALL SFZ LLC – Type SLX

USG MEXICO S A DE C V – Type SLX

4. **Gypsum Board**\* –

System A – 1 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. OC when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC – Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO – Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULX, ULX, WRC, WRX, USGX. When ULX is used insulation, Item 6, **Batts and Blankets**\* is required and minimum stud depth is 4 in.

USG BORAL DRYWALL SFZ LLC – Types C, SCX, SGX, USGX

USG MEXICO S A DE C V – Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System B – 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in two layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 12 in. OC when installed vertically and staggered 12 in. from base layer screws or 8 in. OC when installed horizontally and staggered 8 in. from base layer screws. Horizontal joints between inner and outer layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in.

CGC INC – 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO – 1/2 in. Types C, IP-X2, IPC-AR, or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULX, ULX, USGX, WRC, WRX.

USG BORAL DRYWALL SFZ LLC – 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

USG MEXICO S A DE C V – 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System C – 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, secured with 1-1/4 in. long Type S steel screws spaced 8 in. OC along vertical edges and 12 in. OC in the field when installed vertically or 8 in. OC along the vertical edges and in the field when installed horizontally. Horizontal joints need not be backed by steel framing. Screws along side joints offset 4 in. Requires min 4 in. deep framing per Items 1, 2 and 3. Requires min 3 in. thick mineral wool batts per Item 6.

CGC INC – Types IP-X3 or ULTRACODE

UNITED STATES GYPSUM CO – Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC – Type ULTRACODE

USG MEXICO S A DE C V – Types IP-X3 or ULTRACODE

System D – 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached directly to studs with 1 in. long Type S steel screws spaced 24 in. in. when installed vertically or 16 in. OC when installed horizontally. Horizontal joints need not be backed by steel framing. Requires face layer of 1/2 or 5/8 in. thick cementitious backer units per Item 7 and min 1-1/2 in. thick mineral wool batts per Item 6.

CGC INC – Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO – Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULX, ULX, USGX, WRC, WRX.

USG BORAL DRYWALL SFZ LLC – Types C, SCX, SGX, USGX

USG MEXICO S A DE C V – Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System E – 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, attached to studs with 1 in. long Type S steel screws spaced 12 in. OC when installed vertically or 8 in. when installed horizontally. Horizontal joints need not be backed by steel framing.

CGC INC – 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

UNITED STATES GYPSUM CO – 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULX, ULX, USGX, WRC, WRX.

USG BORAL DRYWALL SFZ LLC – 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, USGX

USG MEXICO S A DE C V – 1/2 in. Types C, IP-X2, IPC-AR; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System F – 2 Hr

Gypsum panels, with beveled, square or tapered edges, nom 1/2 in. or 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically in two layers. Inner or base layer attached to resilient furring channels (Item 2B) with 1 in. long Type S steel screws spaced 24 in. OC. Outer or face layer attached to resilient furring channels (Item 2B) with 1-5/8 in. long Type S steel screws spaced 12 in. OC and staggered 12 in. from base layer screws. Joints between inner and outer layers staggered 24 in.

CGC INC – 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX.

UNITED STATES GYPSUM CO – 1/2 in. Type C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SGX, SHX, ULX, ULX, USGX, WRC, WRX.

USG BORAL DRYWALL SFZ LLC – 1/2 in. Type C; 5/8 in. Types C, SCX

USG MEXICO S A DE C V – 1/2 in. Types C, IP-X2, IPC-AR or WRC; 5/8 in. Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

System G – 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally in three layers. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Middle layer attached to studs with 1-5/8 in. long Type S steel screws spaced 24 in. when installed vertically or 16 in. OC when installed horizontally. Outer or face layer attached to studs with 2-1/4 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints or adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC – Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO – Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC – Type C

USG MEXICO S A DE C V – Types C, IP-X2, IPC-AR, WRC

System H – 3 Hr

Gypsum panels, with beveled, square or tapered edges, nom 5/8 in. thick, 48 in. or 1200 mm wide, applied vertically or horizontally, two layers over the flange of the "C" section of the studs, one layer over the flange of the "H" section of the studs. Inner or base layer attached to studs with 1 in. long Type S steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Face layer attached to studs with 1-5/8 in. long Type S steel screws spaced 16 in. when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

CGC INC – Types C, IP-X2, IPC-AR, WRC

UNITED STATES GYPSUM CO – Types C, IP-X2, IPC-AR, WRC

USG BORAL DRYWALL SFZ LLC – Type C

USG MEXICO S A DE C V – Types C, IP-X2, IPC-AR, WRC

System I – 4 Hr

Gypsum panels, with beveled, square or tapered edges, nom 3/4 in. thick, 4 ft wide (or 1200 mm for metric spacing) wallboard with square or tapered edges. Total of four layers to be used. First and second (inner) layers applied vertically or horizontally over the steel studs. Horizontal joints need not be backed by steel framing. When applied vertically, joints centered over studs and staggered min 24 in., otherwise all joints staggered min 12 in. First layer secured to studs with 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 24 in. OC. Second layer secured to studs with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Third layer applied vertically over the furring channels (Item 2C) with 1-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. Fourth layer applied vertically or horizontally with 2-1/4 in. long Type S self-drilling, self-tapping bugle-head steel screws spaced 12 in. OC. When applied vertically, joints to be staggered min 24 in. from third layer, otherwise all joints staggered min 12 in.

CGC INC – Types IP-X3 or ULTRACODE

UNITED STATES GYPSUM CO – Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC – Type ULTRACODE

USG MEXICO S A DE C V – Types IP-X3 or ULTRACODE

4A. **Gypsum Board**\* – (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer. For direct attachment only) – Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 9) or Lead Discs or Tabs (see Item 10).

RAY-BAR ENGINEERING CORP – Type RB-LBG

4B. **Gypsum Board**\* – (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer. For direct attachment only) – Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or #6 by 1-1/4 in. long bugle head drill) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

NEW ENGLAND LEAD BURNING CO INC, DBA NELCO – Type Nelco

4C. **Gypsum Board**\* – (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer. For direct attachment only) – Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. See Items 1, 2, 2A, 2B and 2D. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 9A) or Lead Discs (see Item 10A). Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.140 in. placed on the face of studs with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.055 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201F, Grade "C".

MATCO INDUSTRIES INC – Type X-Ray Shielded Gypsum

4D. **Gypsum Board**\* – (As an alternate to Item 4 Systems A, B, C, D, E, G, H, and I when used as the base layer. For direct attachment only) – Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.055 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201F, Grade "C".

RADIATION PROTECTION PRODUCTS INC – Type RPP - Lead Lined Drywall

5. **Joint Tape and Compound** – (Not Shown)

Systems A, B, C, E, F, G, H, I

Joints on outer layers of gypsum boards (Item 4 and 4A) covered with paper tape and joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges. Exposed screw heads covered with joint compound.

6. **Batts and Blankets**\* –

Systems A, B, E, F, G, H, I

(Optional) – Mineral wool or glass fiber batts partially or completely filling stud cavity. Any mineral wool or glass fiber batt mineral bearing the UL Classification Marking as to Fire Resistance.

System A With Type ULDX Gypsum Boards

Placed in stud cavities, any min. 3-1/2 in. thick glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See **Batts and Blankets (BKNV or BZ32) Categories** for names of Classified companies.

Systems C & D

Min 3 in. (System C) and min 1-1/2 in. (System D) thick mineral wool batts, friction fitted between the studs and floor and ceiling runners.

ROCKWOOL – Type AFB

THERMAFIBER INC – Type SAFB, SAFB FF

7. **Cementitious Backer Units**\* – (System D) – Nom 1/2 or 5/8 in. thick panels, square edge, attached to studs over gypsum wallboard with 1-5/8 in. long, Type S-12, corrosion resistant steel screws spaced 8 in. OC and staggered 8 in. from gypsum wall board screws. Joints covered with glass fiber mesh tape. Vertical joints staggered one stud cavity from gypsum wallboard joints. Horizontal joints staggered a min of 12 in. from the gypsum wallboard joints.

UNITED STATES GYPSUM CO – Type DCB

8. **Laminating Adhesive**\* – (Optional, Not Shown) – Used to bond outer layer of Cementitious Backer Units (Item 7) to inner layers of gypsum board (Item 4) in System D. ANSI A136.1 Type 1 organic adhesive applied with 3/4 in. square

notched trowel. See Adhesives (BYWR) in the Fire Resistance Directory or Adhesives (BULZ) in the Building Materials Directory for names of Classified companies.

9. **Lead Batten Strips** – (Not Shown, For Use With Item 4A) – Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201F, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations. Required behind vertical joints.

9A. **Lead Batten Strips** – (Not Shown, for use with Item 4C) – Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201F, Grades "B, C or D". Lead batten strips required behind vertical joints of



## Design No. L528

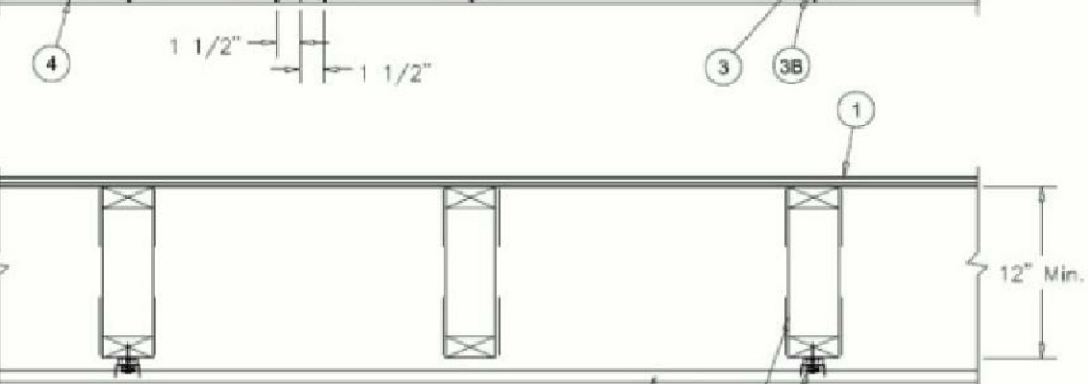
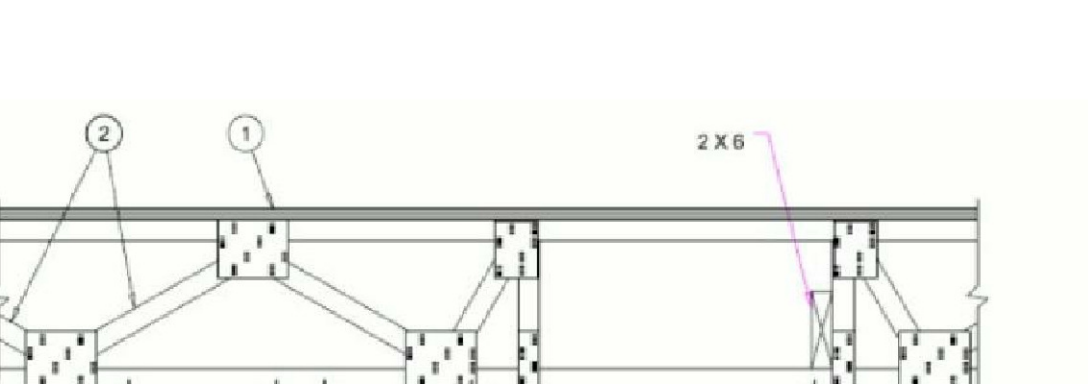
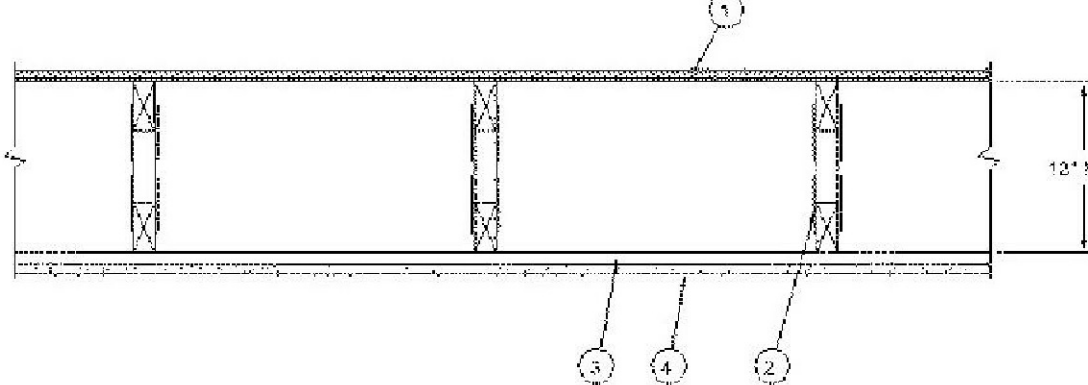
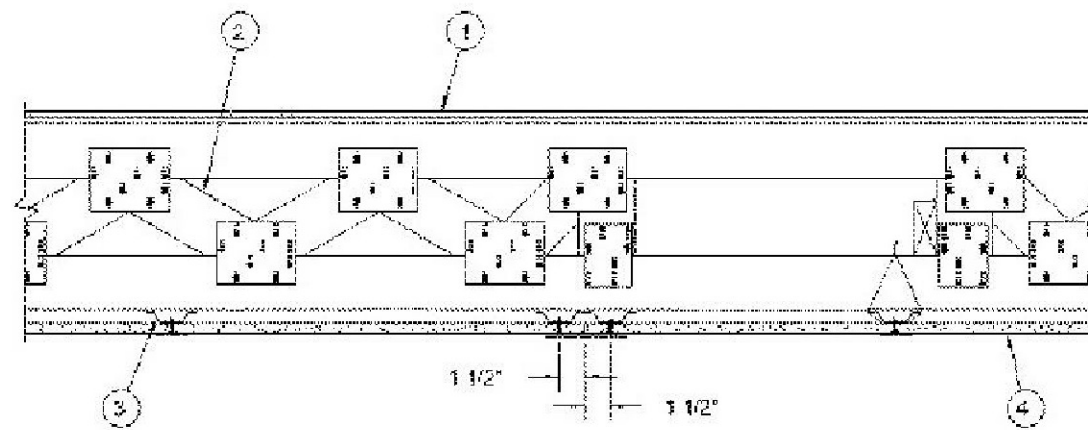
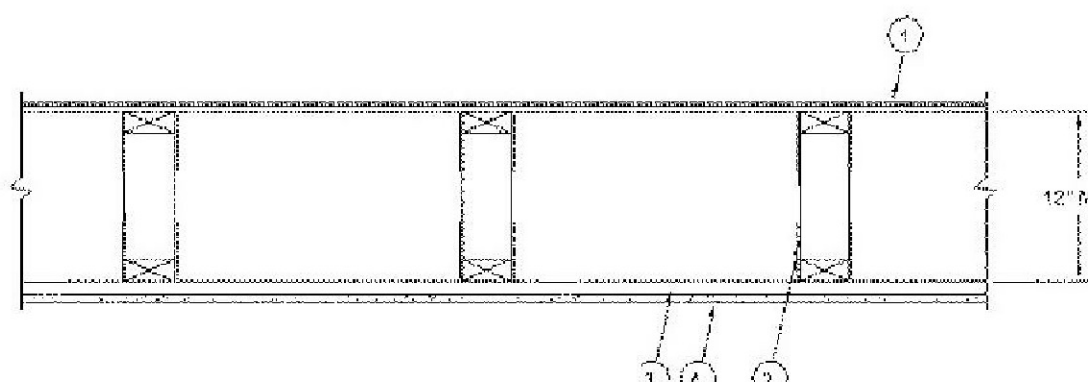
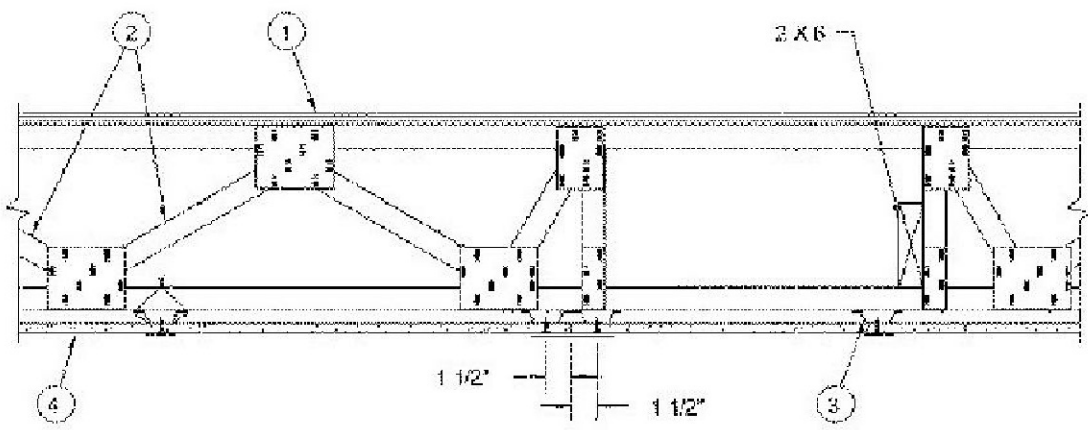
June 22, 2018

Unrestrained Assembly Rating - 1 Hr.

Finish Rating - 22 Min.

**This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used – See Guide [BXUW](#) or [BXUV7](#).**

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. **Flooring System** – The flooring system shall consist of one of the following:

### System No. 1

**Subflooring** – Min 23/32 in. thick T & G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with end joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

### System No. 2

**Subflooring** – Min 23/32 in. thick T & G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with end joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.  
**Vapor Barrier** – (Optional) – Nom 0.010 in. thick commercial rosin-sized building paper.  
**Finish Flooring** – Min 3/4 in. thickness of lightweight insulating concrete with **Perlite Aggregate\*** or **Vermiculite Aggregate\***, or gypsum concrete.

See **Perlite Aggregate** (CPFX) and **Vermiculite Aggregate** (CIZZ) categories for names of manufacturers.

### System No. 3

**Subflooring** – Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Floor Mat Materials\*** – (Optional) – Floor mat material nom 5/64 in. (2 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1 in. of floor-topping mixture.  
**ECORE INTERNATIONAL INC** – Type QTscu 4002.

**HACKER INDUSTRIES INC** – Type Hacker Sound-Mat.

**Alternate Floor Mat Materials** – (Optional) – Floor mat material nom 1/4 in. (6 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. (32 mm) of floor-topping mixture.  
**ECORE INTERNATIONAL INC** – Type QTt8m 3006-3

**HACKER INDUSTRIES INC** – Type Hacker Sound-Mat II.

**Alternate Floor Mat Materials** – (Optional) – Floor mat material nom 1/8 in. (3 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 3/4 in. (19 mm)  
**HACKER INDUSTRIES INC** – FIRM-FILL SCM 125

**Alternate Floor Mat Materials** – (Optional) – Floor mat material nom 1/4 in. (6 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1 in. (25 mm)  
**HACKER INDUSTRIES INC** – Type FIRM-FILL SCM 250, Quiet Quirl 55/025

**Alternate Floor Mat Materials** – (Optional) – Floor mat material nom 3/8 in. (10 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/4 in. (32 mm)  
**HACKER INDUSTRIES INC** – FIRM-FILL SCM 400, Quiet Quirl 60/040

**Alternate Floor Mat Materials** – (Optional) – Floor mat material nom 3/4 in. (19 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in. (38 mm)  
**HACKER INDUSTRIES INC** – Type FIRM-FILL SCM 750, Quiet Quirl 65/075

**Metal Lath** – (Optional) – For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

**Finish Flooring – Floor Topping Mixture\*** – Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand.  
**HACKER INDUSTRIES INC** – Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 3310, Firm-Fill 4010, Firm-Fill High Strength, Gyp-Span Radiant.

### System No. 4

**Subflooring** – Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.  
**UNITED STATES GYPSUM CO** – Types LRK, HSLRK, CSD

**LATICRETE SUPERCAP L L C** – Types LRK, HSLRK

**USO MEXICO S A DE C V** – Types LRK, HSLRK, CSD

**Floor Mat Materials\*** – (Optional) – Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.  
**UNITED STATES GYPSUM CO** – Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment 50R-25

**Alternate Floor Mat Materials** – (Optional) – Nom 3/8 in. thick floor mat material loose laid over the subfloor. Floor topping thickness shall be as specified under **Floor Topping Mixture**.  
**GRASSWOX L L C** – Type SCS0

**Alternate Floor Mat Materials** – (Optional) – Floor mat material nominal 3/8 in. thick loose laid over the subfloor. Floor topping shall be a min 3/4 in. thick.

### System No. 5

**Subflooring** – Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 ps through nozzle. Mixture shall consist of 1.4 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand with 5-1/2 gal of water.

**ELASTIZEL CORP OF AMERICA** – Type FF

### System No. 6

**Subflooring** – Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 ps through nozzle. Mixture shall consist of 1.2 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand with 5-1/2 gal of water.

**AERIX INDUSTRIES** – Floor Topping Mixture

### System No. 7

Deleted.

### System No. 8

**Subflooring** – Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1500 psi. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.  
**MAXXON CORP** – Types D-C, G-C, GC2000, L-R, T-F, CT, SS

**RAPID FLOOR SYSTEMS** – Types RF, RFP, RFU, Orterrete

**Floor Mat Materials\*** – (Optional) – Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.  
**MAXXON CORP** – Type Acousti-Mat I, Acousti-Mat II, Acousti-Mat II HP, Enkasonic 9110, Enkasonic 9110 HP, Acousti-Mat 3, Acousti-Mat 3 HP, Acousti-Mat LP, Acousti-Mat LP-R, Acousti-Mat SD.

**Floor Mat Reinforcement** – (Optional) – Refer to manufacturer's instructions regarding minimum thickness of floor topping over each floor mat material, primers, and use of crack suppression reinforcement.  
**MAXXON CORP** – Crack Suppression Mat (CSM) or Maxxon Reinforcement (MR)

**Metal Lath** – (Optional) – For use with or as an alternate to Crack Suppression Mat (CSM) or Maxxon Reinforcement (MR) – 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material. Floor topping thickness shall be min 1-1/2 in.

### System No. 9

**Subflooring** – Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Mixture shall consist of 5 to 8 gal of water to 80 lbs of floor topping mixture to 2.1 cu ft of sand.  
**ULTRA QUIET FLOORS** – UQF-A, UQF-Super Blend, UQF-Plus 200

### System No. 10

**Subflooring** – Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.

**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 3/4 in. thickness of floor topping having a mir compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

**FORMULATED MATERIALS LLC** – Types FR-25, FR-30, and StabMix

**Alternate Floor Mat Materials\*** – (Optional) Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in.  
**FORMULATED MATERIALS LLC** – Types M1, M2, M3, R1, and R2

### System No. 11

**Subflooring** – Min 1 by 6 in. T & G lumber fastened diagonally to trusses, or min 15/32 in. thick plywood or min 7/16 in. thick oriented strand board (OSB) wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered.

**Finish Floor – Mineral and Fiber Board\*** – Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.  
**HOMASOTE CO** – Type 440-32 Mineral and Fiber Board

### System No. 12

**Subflooring** – Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 3/4 in. thickness of floor topping having a mir compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.  
**ACO MATERIALS** – AccuQuiet types P80, C40, D13, D-18, D25, DX38, BM 125, EM 125S, EM 25C, EM 250S, EM 375, BM 375S, EM 750, and EM 750S.

### System No. 13

**Subflooring** – Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.  
**UNITED STATES GYPSUM CO** – Types LRK, HSLRK, CSD

**Subflooring** – Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.  
**UNITED STATES GYPSUM CO** – Types LRK, HSLRK, CSD

**Floor Mat Materials\*** – (Optional) – Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.  
**UNITED STATES GYPSUM CO** – Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment 50R-25

**Alternate Floor Mat Materials** – (Optional) – Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.  
**KEENE BUILDING PRODUCTS CO INC** – Type Quiet Quirl 60/040 and Quiet Quirl 60/040 N

**Alternate Floor Mat Materials\*** – (Optional) – Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.  
**KEENE BUILDING PRODUCTS CO INC** – Type Quiet Quirl 65/075, Quiet Quirl 65/075 N

**Alternate Floor Mat Materials\*** – (Optional) – Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.  
**KEENE BUILDING PRODUCTS CO INC** – Type Quiet Quirl 52/013 and Quiet Quirl 52/013 N

**Alternate Floor Mat Materials\*** – (Optional) – Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.  
**KEENE BUILDING PRODUCTS CO INC** – Quiet Quirl 55/025 MT and Quiet Quirl 55/025 N MT

### System No. 14

**Subflooring** – Min 23/32 in. thick T&G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with end joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

**Gypsum Board\*** – One layer of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to trusses. Gypsum board secured with 1 in. long No. 6 Type W bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. The joints of the gypsum board are to be staggered a minimum of 12 inches from the joints of the subfloor.

**GEORGIA-PACIFIC GYPSUM L L C** – Type D5

**Floor Mat Materials\*** – (As an alternate to the single layer gypsum board) – Floor mat material loose laid over the subfloor.  
**MAXXON CORP** – Type Acousti-Mat I, Acousti-Mat II, Acousti-Mat II HP, Acousti-Mat 3, Acousti-Mat 3 HP, Enkasonic 9110, Enkasonic 9110 HP, Acousti-Mat LP, Acousti-Mat LP-R.

**Gypsum Board\*** – (For use when floor mat is used) Two layers of nom 5/8 in. thick, 4 ft wide gypsum board, installed with long dimension perpendicular to joints on top of the floor mat material. Gypsum board secured to each other with 1 in. long No. 6 Type G bugle head steel screws spaced 12 in. OC and located a min of 1-1/2 in. from side and end joints. The joints of the gypsum board are to be staggered a minimum of 12 inches in between layers and from the joints of the subfloor.

**GEORGIA-PACIFIC GYPSUM L L C** – Type D5

### System No. 15

**Subflooring** – Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 3/4 in. thickness of floor topping having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.  
**DEPENDABLE LLC** – GSL M3.4, GSL M2.6, GSI-CSD and GSI-RH

**Floor Mat Materials\*** – (Optional) – Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.  
**KEENE BUILDING PRODUCTS CO INC** – Type Quiet Quirl 55/025 and Quiet Quirl 55/025 N

**Alternate Floor Mat Materials\*** – (Optional) – Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.  
**KEENE BUILDING PRODUCTS CO INC** – Type Quiet Quirl 60/040 and Quiet Quirl 60/040 N

**Alternate Floor Mat Materials\*** – (Optional) – Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.  
**KEENE BUILDING PRODUCTS CO INC** – Type Quiet Quirl 65/075, Quiet Quirl 65/075 N

**Alternate Floor Mat Materials\*** – (Optional) – Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

**KEENE BUILDING PRODUCTS CO INC** – Type Quiet Quirl 52/013 and Quiet Quirl 52/013 N

**Alternate Floor Mat Materials\*** – (Optional) – Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

**KEENE BUILDING PRODUCTS CO INC** – Quiet Quirl 55/025 MT and Quiet Quirl 55/025 N MT

### System No. 16

**Subflooring** – Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the trusses with joints staggered.  
**Vapor Barrier** – (Optional) – Commercial asphalt saturated felt, 0.030 in. thick.

**Finish Flooring – Floor Topping Mixture\*** – Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See **Floor- and Roof-Topping Mixtures** (CCOX) category for names of Classified Companies.  
**Floor Mat Materials\*** – (Optional) – Nom 3/32 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

**PLITEQ INC** – Type GenieMat RST02

**Floor Mat Materials\*** – (Optional) – Nom 3/16 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.  
**PLITEQ INC** – Typa GenieMat FF04

**Floor Mat Materials\*** – (Optional) – Nom 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.  
**PLITEQ INC** – Type GenieMat FF06

**Floor Mat Materials\*** – (Optional) – Nom 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.  
**PLITEQ INC** – Type GenieMat FF10

**Floor Mat Materials\*** – (Optional) – Nom 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.  
**PLITEQ INC** – Type GenieMat FF17

**Floor Mat Materials\*** – (Optional) – Nom 1 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.  
**PLITEQ INC** – Type GenieMat FF25

**Floor Mat Materials\*** – (Optional) – Nom 1 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.  
**PLITEQ INC** – Type GenieMat FF25

### System No. 17

**Subflooring** – Nom. 1-1/2 in. thick T & G laminated composite plywood sub-floor panels to be perpendicular to the trusses with end joints staggered 4 ft. End joints centered over top chord of trusses. Subfloor panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss.

**Wall and Partition Facings and Accessories\* – Sound Barrier (Optional)** – Acoustic Sleeper pads stapled to the top of the subfloor and centered over wood trusses. Acoustic Sleeper pads are to be spaced appropriately so that the finish floor panels are fastened through Acoustic Sleeper pads to the trusses.  
**RSP INDUSTRIES INC** – SAP board

### System No. 18

**Subflooring** – Min 23/32 in. thick T & G wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss.

**Wall and Partition Facings and Accessories\* – Sound Barrier (Optional)** – Acoustic Sleeper pads stapled to the top of the subfloor and centered over wood trusses. Acoustic Sleeper pads are to be spaced appropriately so that the finish floor panels are fastened through Acoustic Sleeper pads to the trusses.  
**STC ARCHITECTURAL PRODUCTS L L C DBA STC SOUND CONTROL** – Acoustic Sleeper

**Finish Floor** – Min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered 4 ft. Panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss.

2. **Trusses** – Parallel chord trusses, spaced a max 24 in. OC, fabricated from No. 2 by 4 in. Lumber with lumber oriented vertically or horizontally. Min truss depth is 12 in. when Item 5 is not employed. Min truss depth is 18 in. when Item 9 is employed. Truss members secured together with min No. 20 MSG galv steel truss plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split-tooth-type plate. Each tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approx 7/8 in. centers with four rows of teeth per in. of plate width.

3. **Furring Channels** – Furring channels, 7/8 in. deep by 2-9/16 in. or 2-11/16 in. wide at the base and 1-7/16 in. wide at the face, formed from No. 25 galv steel, spaced 24 in. OC perpendicular to trusses. Channels secured to trusses with double strand of No. 18 SWG galv steel wire spaced 48 in. OC. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Two furring channels used at end joints of gypsum board (Item 4), each extending a min of 6 in. beyond both side edges of the board.

3A. **Resilient Channels** – (Not Shown) – As an alternate to Item 3, resilient channel formed from No. 26 MSG galv steel, spaced 16 in. OC perpendicular to trusses. Channels secured to each truss with 1-1/4 in. long No. 6 Type S bugle head steel screw. Channels overlapped at splices 4 in. Two resilient channels used at end joints of gypsum board (Item 4), each extending a min of 6 in. beyond both side edges of the board. When formed plastic insulation (Item 7E) is applied to the underside of the subflooring, resilient channels shall be spaced maximum 12 in. OC.

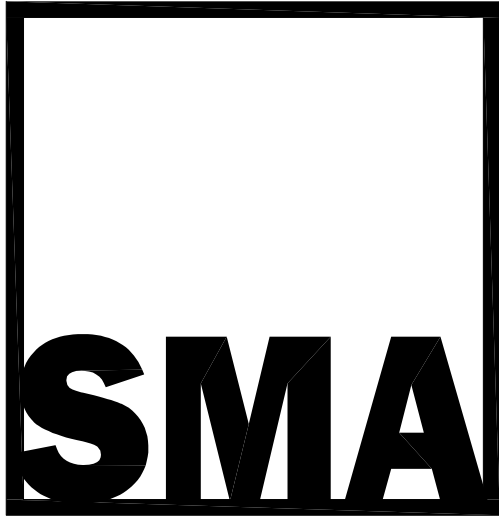
3B. **Steel Framing Members\*** – (Optional) – Used as an alternate method to attach furring channels to trusses (Item 2). Clips spaced 48 in. OC. Resic-1 and Resic-1 (2.75) clips secured to the bottom chord of alternating trusses with No. 8 x 1-1/2 in. coarse drywall screw through the center grommet. Resic-V and Resic-V (2.75) clips secured to the bottom chord of alternating trusses with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted to joints with Resic-1 and Resic-V clips for use with 2-9/16 in. wide furring channels. Resic-1 (2.75) and Resic-V (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item 3. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two min 7/16 in. long No. 6 self-tapping framing screws, at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 4. When Fiber, Sprayed (Item 6) is used, furring channel spacing reduced to 16 in. OC and two layers of nom 5/8 in. thick, 4 ft wide gypsum board shall be installed as described in Item 4.

3C. **Steel Framing Members\*** – (Optional, Not Shown) – Used as an alternate method to attach furring channels to trusses. Clips spaced 48 in. OC, and secured to the bottom chord to alternating trusses with two No. 8 x 1-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 4. Two layers of gypsum board required as described in Item 4. Not evaluated for use with Item 6. When Item 6 is used and Batts and Blankets\* are added per Section III, Item 18 Blanket Insulation in the General Information of this Directory (BXUV), clips spaced 48 in. OC, furring channels spaced 16 in. OC max, 3-1/2 in. max. Batts and Blankets\* secured to plywood subfloor with staples spaced 12 in. OC or to the trusses with 0.090 in. diam galv steel wire spaced 12 in. OC, and two layers of gypsum board required as described in Item 4A. When the Batts and Blankets\* are draped over the furring channel/gypsum panel ceiling membrane









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PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN  
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FOR COORDINATION OF ALL DIMENSIONS.

JOB NO. 15-0353

D.B./C.B. R.A./P.D.

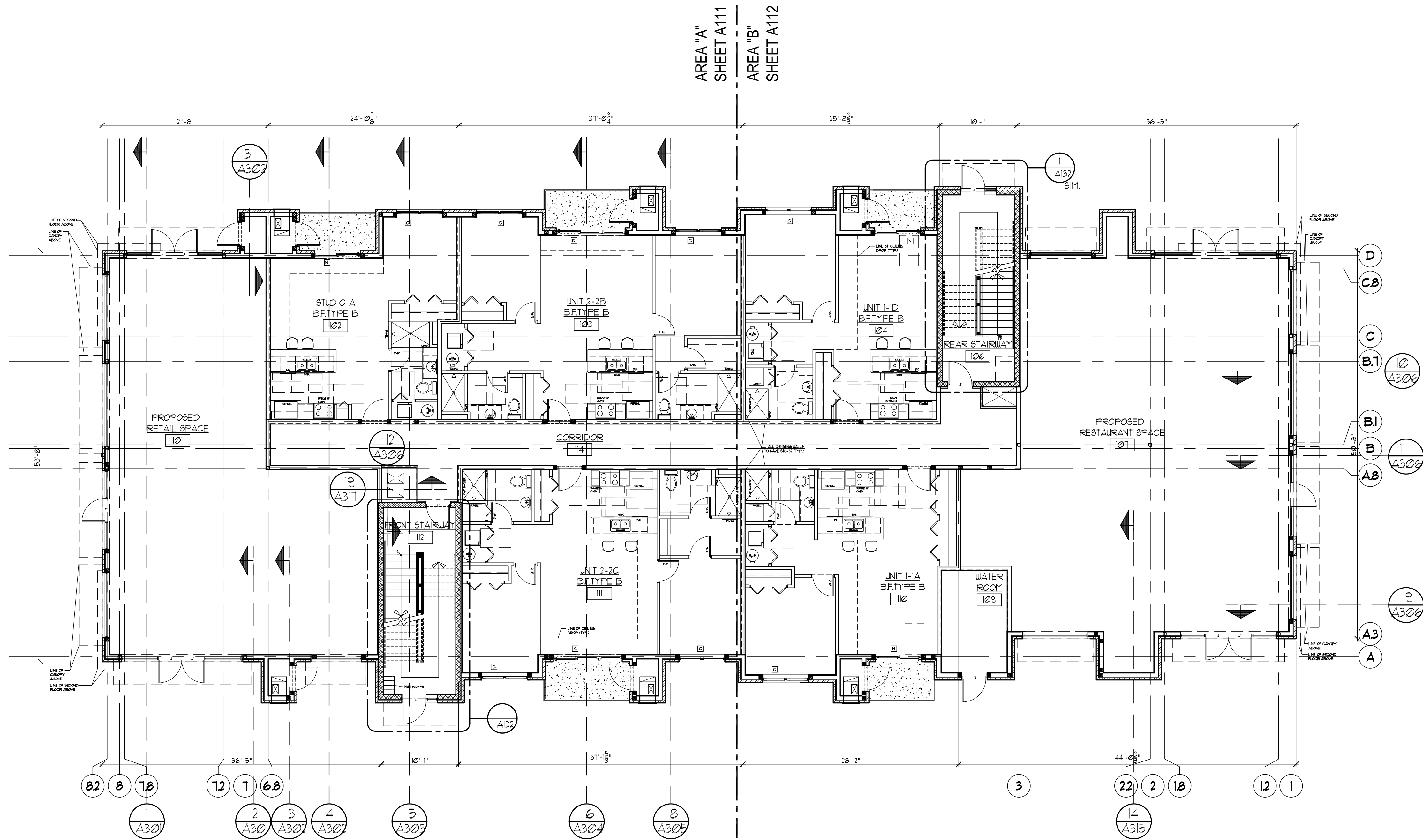
ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
FIRST FLOOR PLAN

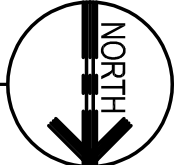
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A1.0.1

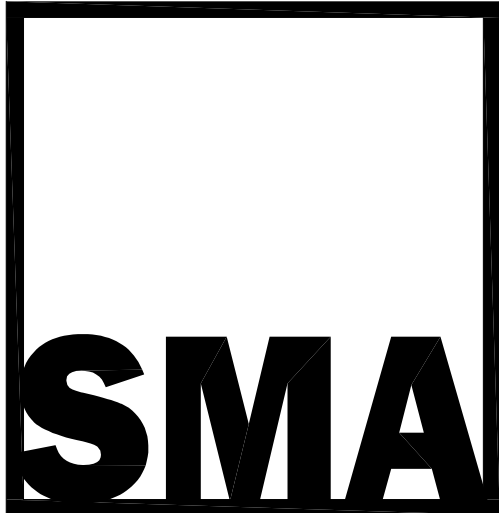


STUDIO 4, BF TYPE B AREA = 614 SF.
STUDIO B, BF TYPE B AREA = 631 SF.
UNIT 1-1A, BF TYPE B 1 BED RM, 1 BATH RM AREA = 744 SF.
UNIT 1-1D, BF TYPE B 1 BED RM, 1 BATH RM AREA = 711 SF.
UNIT 2-1A, BF TYPE B 2 BED RM, 2 BATH RM AREA = 951 SF.
UNIT 2-2B, TYPE B 2 BED RM, 2 BATH RM AREA = 1031 SF.
UNIT 2-2C, BF TYPE B 2 BED RM, 2 BATH RM AREA = 10031 SF.
UNIT 2-2E 2 BED RM, 1 OFFICE 2 BATH RM AREA = 1218 SF.

1  
A101  
FIRST FLOOR PLAN  
SCALE: 1/8" = 1'-0"







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JOB NO. 15-0353

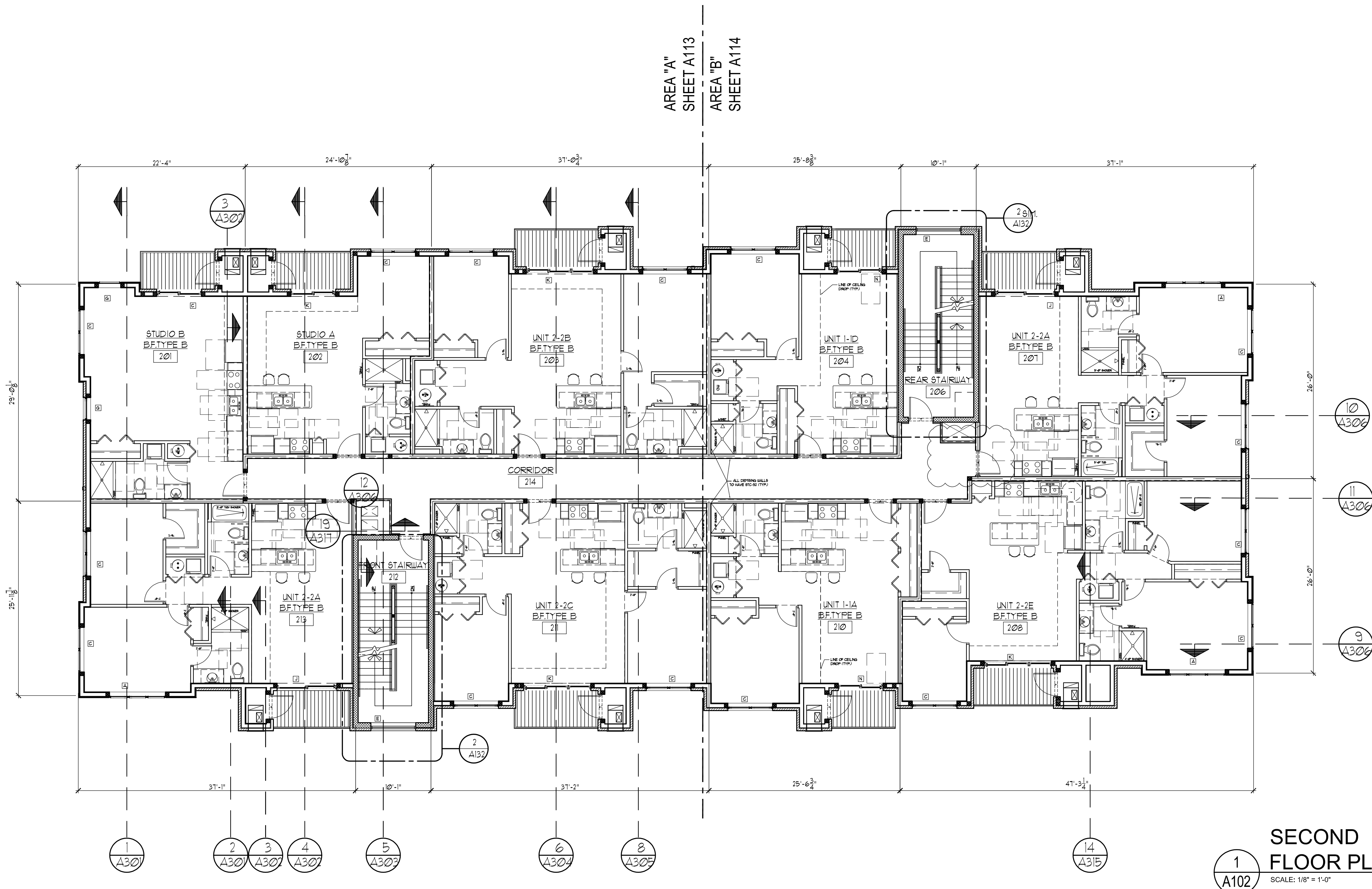
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ISSUANCES

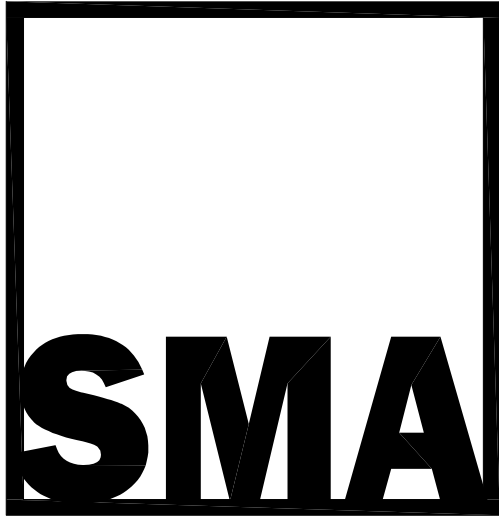
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SHEET TITLE  
SECOND FLOOR  
PLAN

DWG. NO.  
A1.0.2







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ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

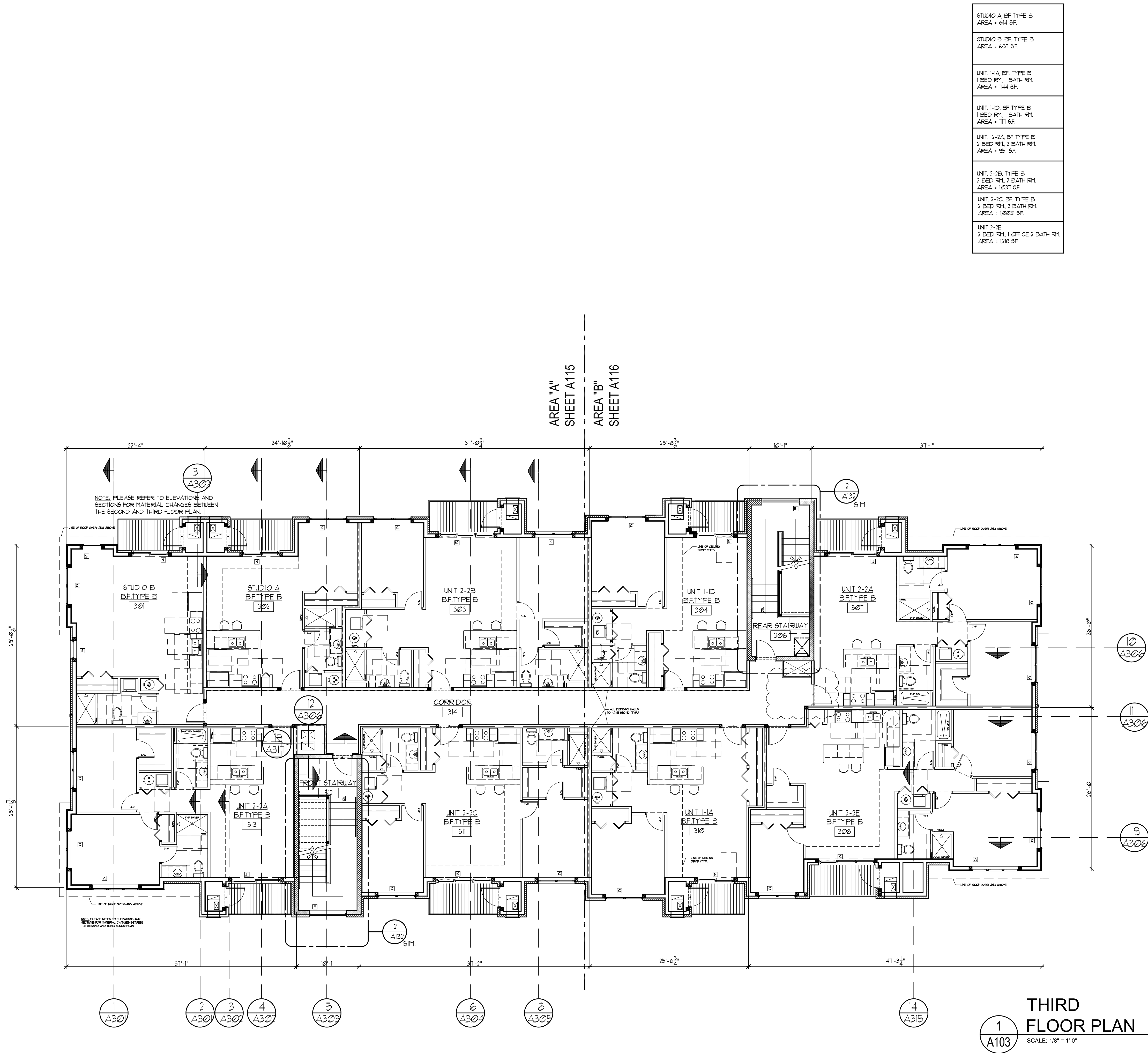
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THIRD FLOOR PLAN

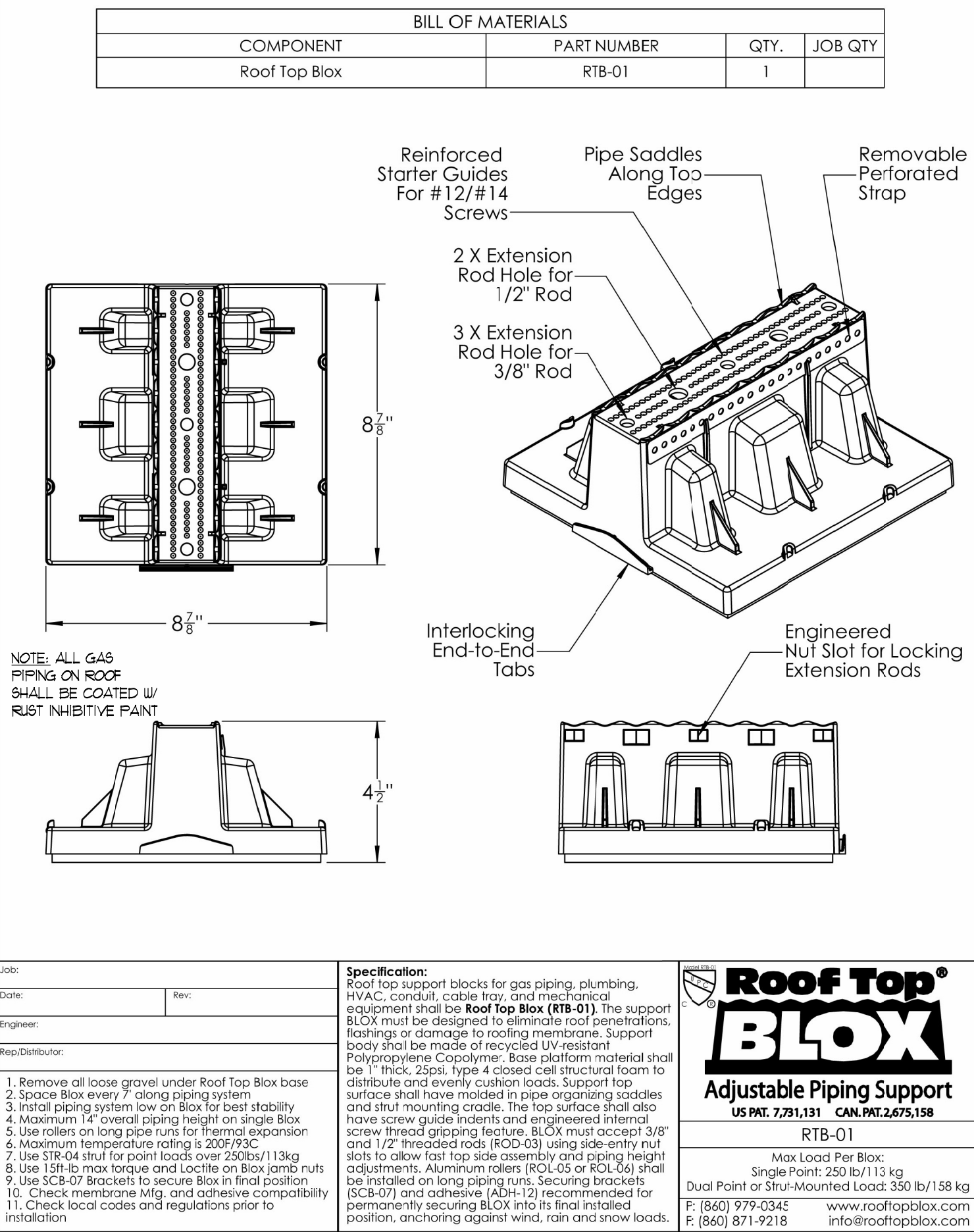
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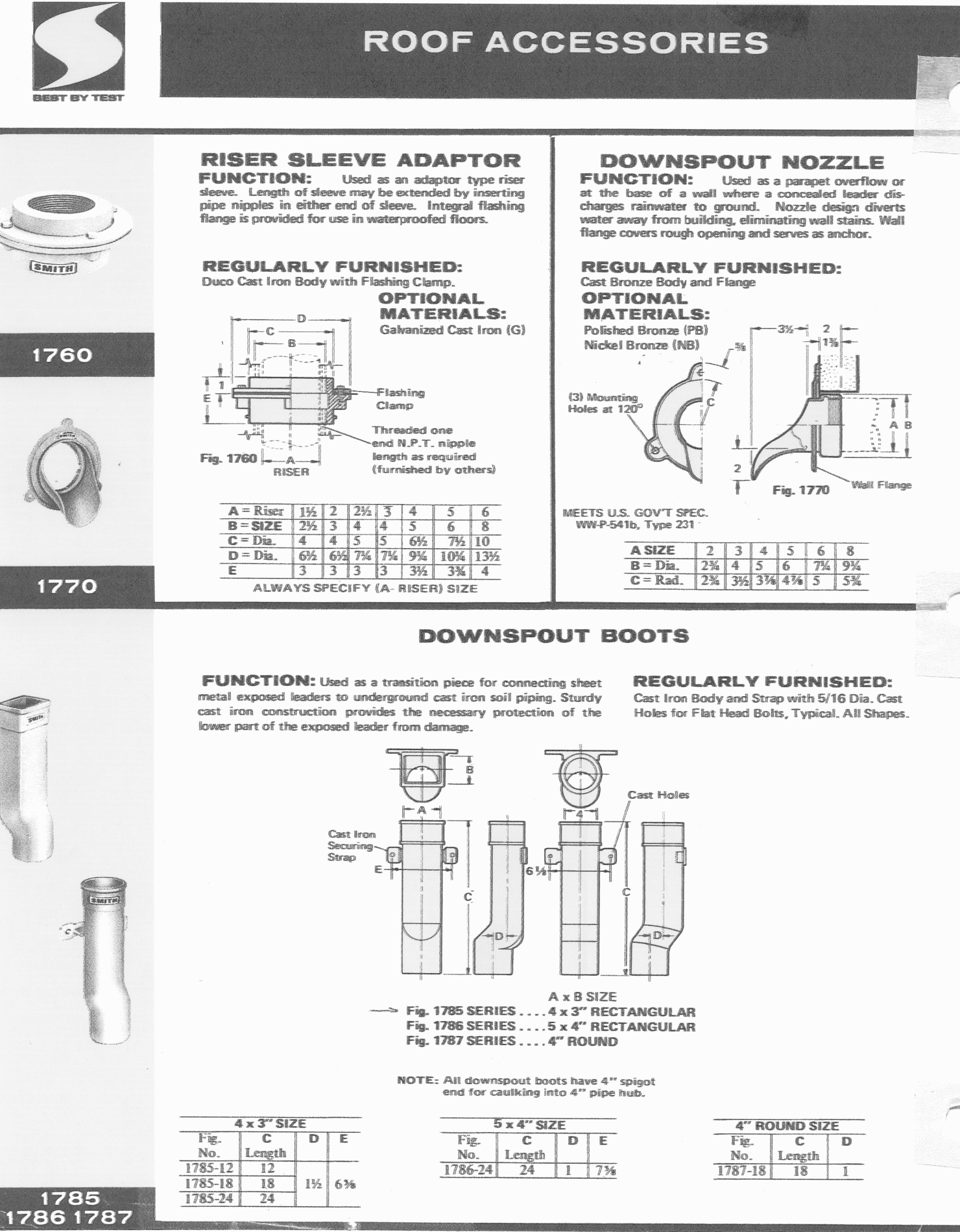
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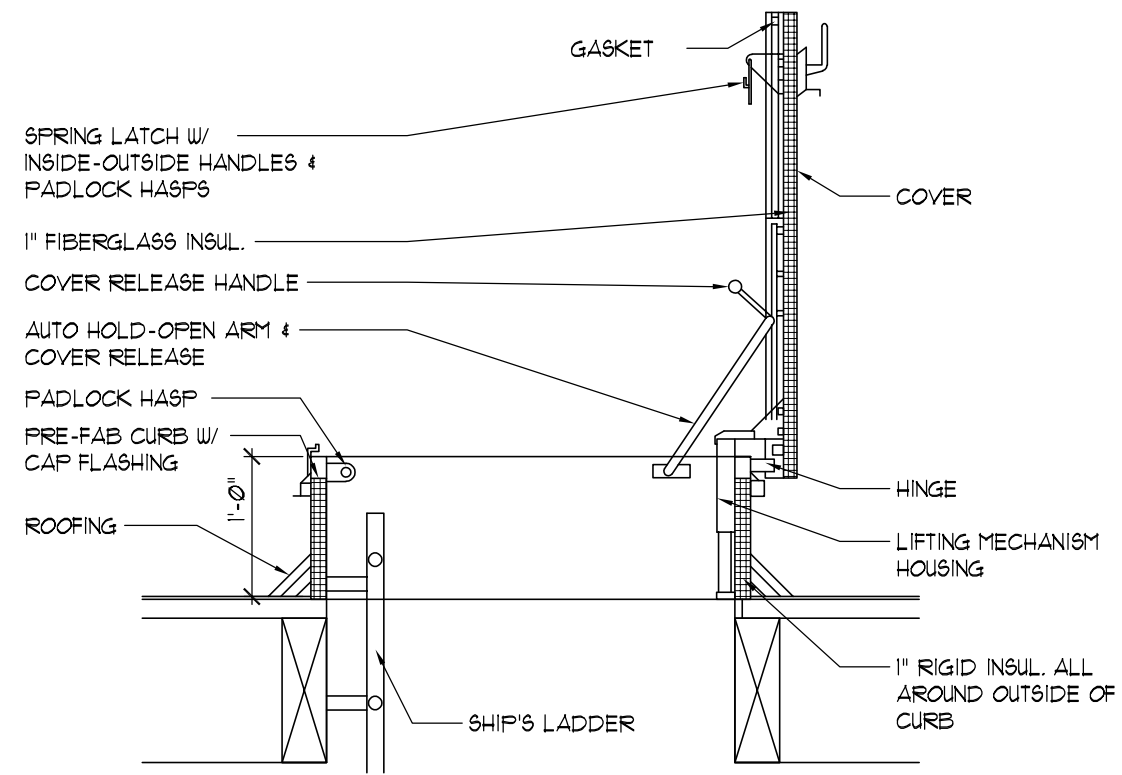
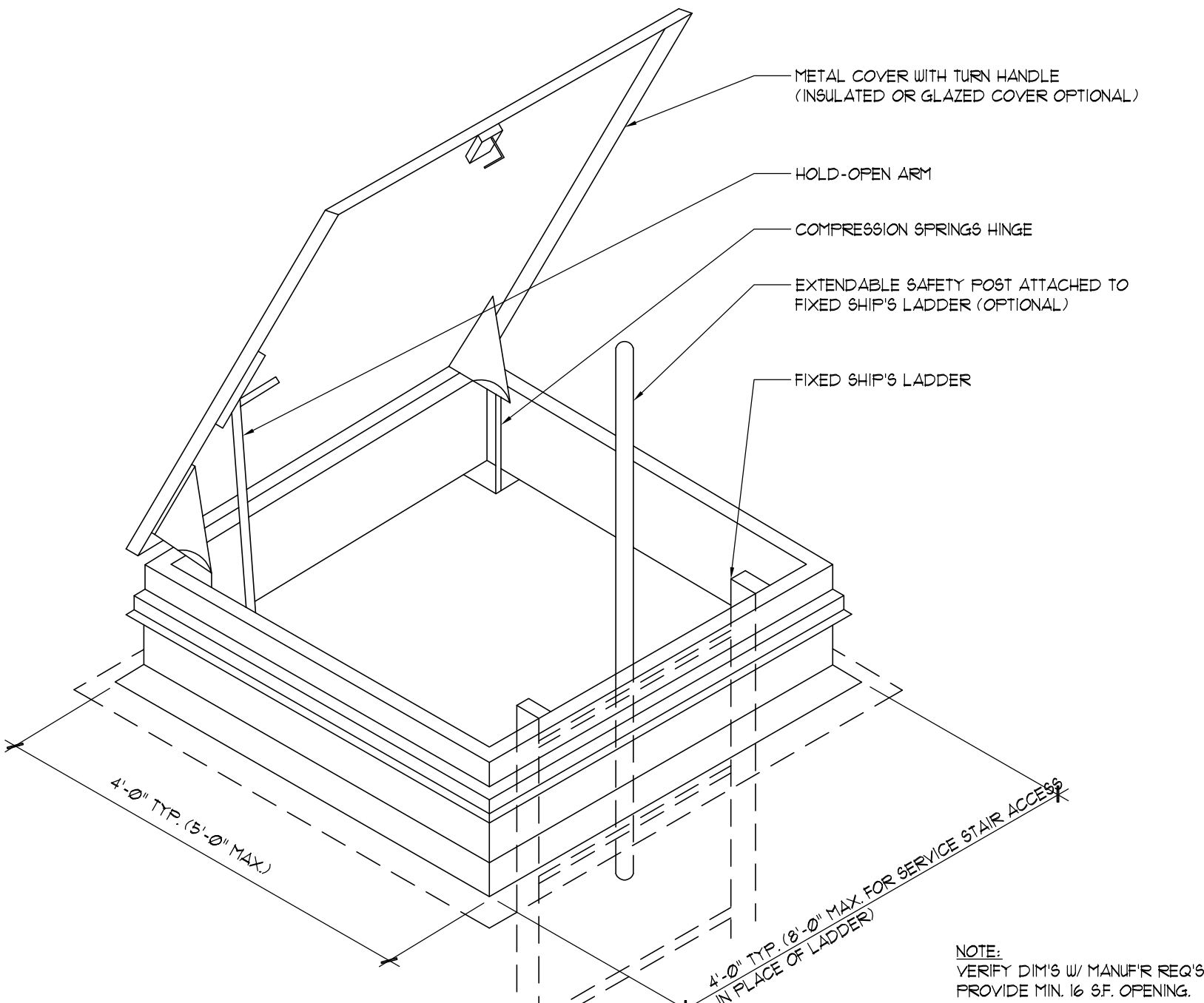
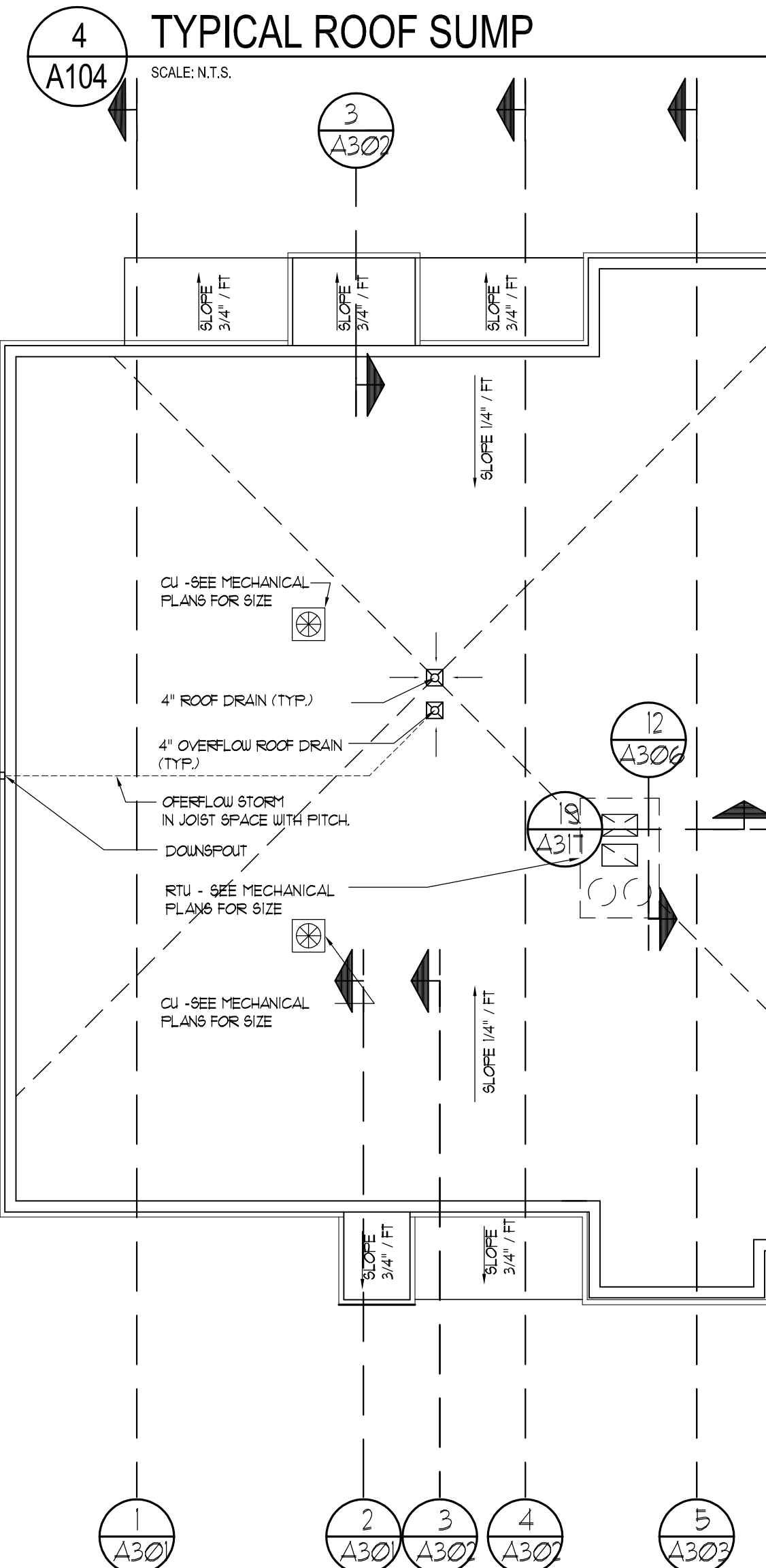
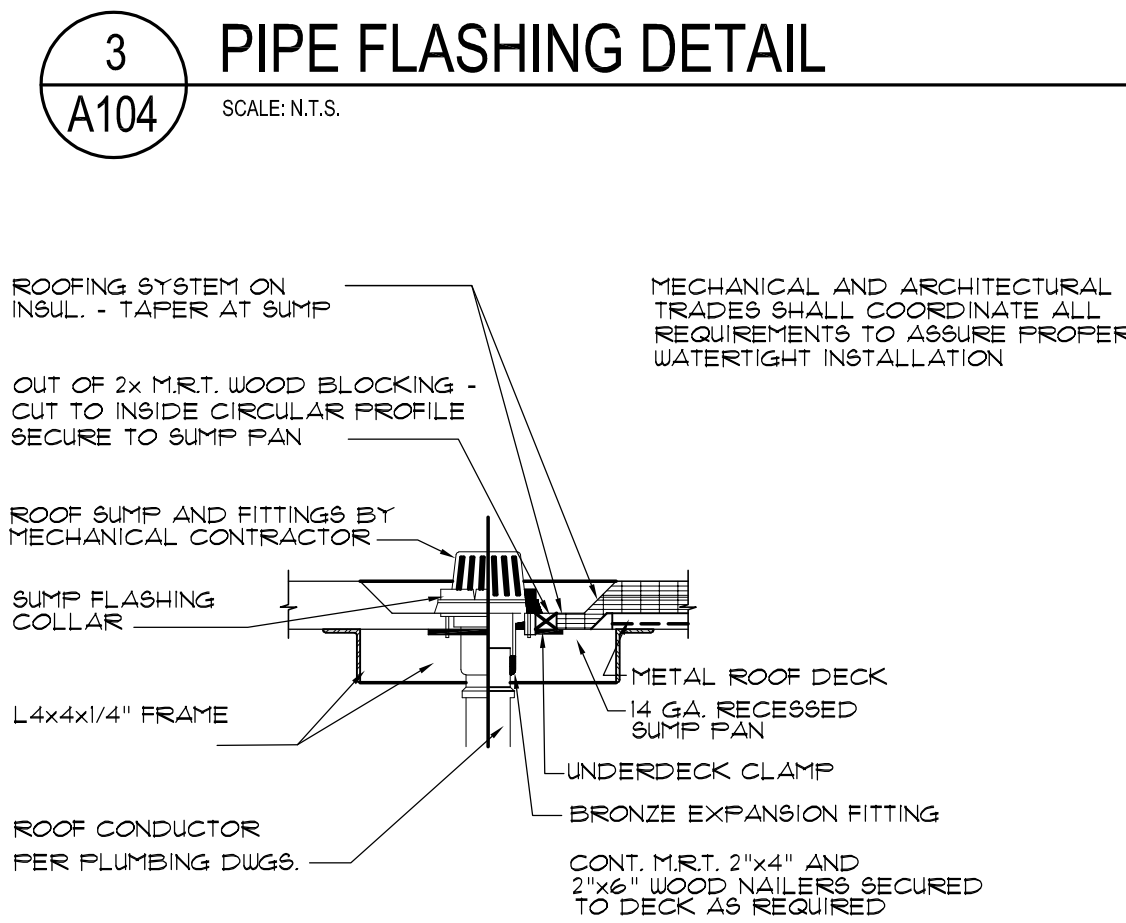
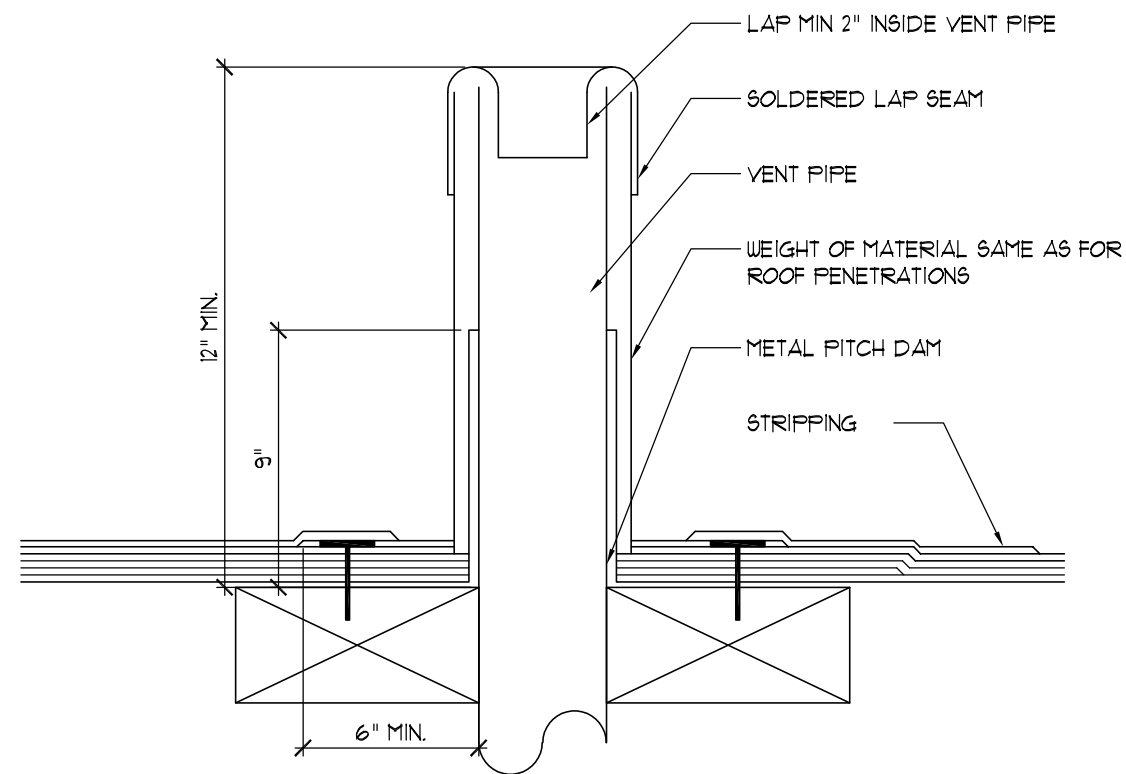




2 GAS PIPE SUPPORT DETAIL  
A104 SCALE: N.T.S.



7 ROOF ACCESSORIES  
A104 SCALE: N.T.S.



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BUILDING # 5

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12-23-2021

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JOB NO. 15-0353

D.B./C.B. R.A./P.D.

ISSUANCES

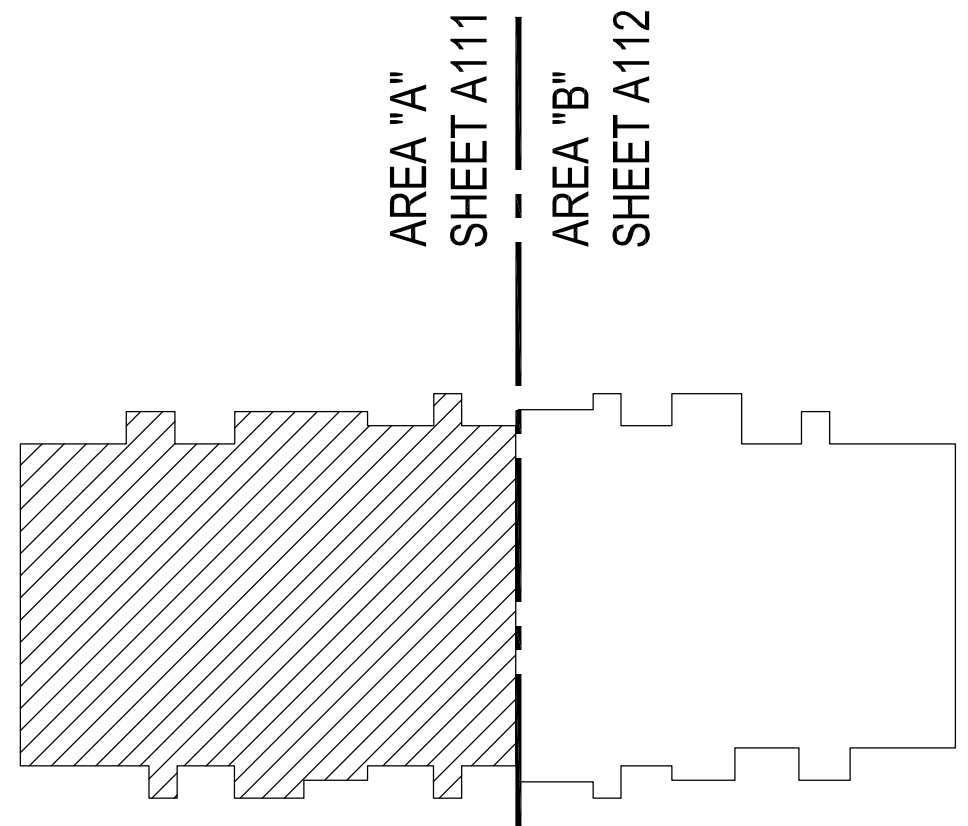
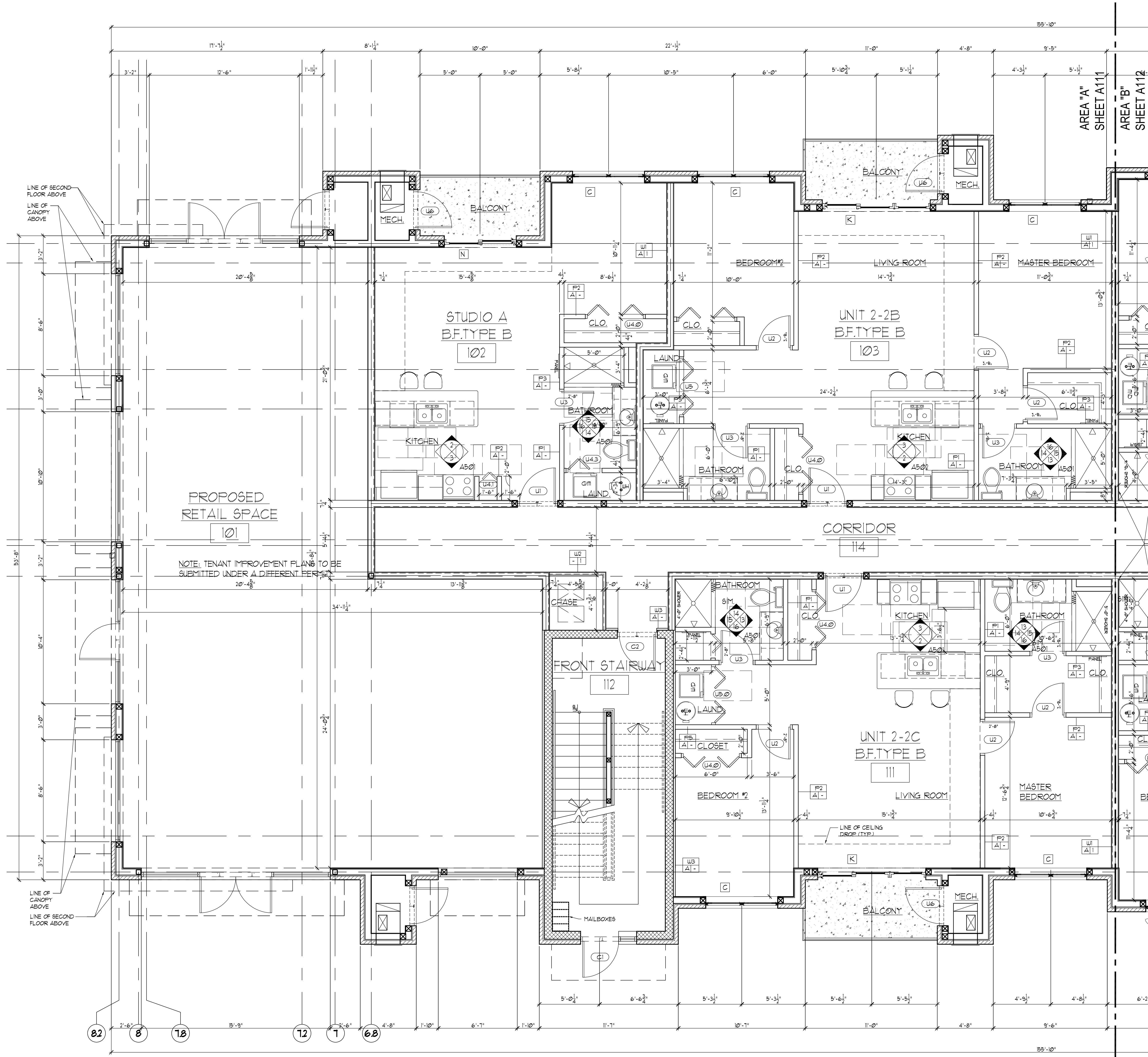
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1	REVIEW SET	12/23/21

SHEET TITLE  
ROOF PLAN

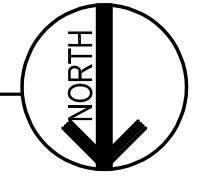
DWG. NO.

A1.0.4





KEY MAP  
SCALE: N.T.S.



STUDIO A, BF TYPE B AREA = 614 SF.
STUDIO B, BF TYPE B AREA = 631 SF.
UNIT 1-1A, BF TYPE B 1 BED RM, 1 BATH RM AREA = 144 SF.
UNIT 1-1D, BF TYPE B 1 BED RM, 1 BATH RM AREA = 111 SF.
UNIT 2-2A, BF TYPE B 2 BED RM, 2 BATH RM AREA = 95 SF.
UNIT 2-2B, TYPE B 2 BED RM, 2 BATH RM AREA = 1031 SF.
UNIT 2-2C, BF TYPE B 2 BED RM, 2 BATH RM AREA = 1023 SF.
UNIT 2-2E 2 BED RM, 1 OFFICE 2 BATH RM AREA = 120 SF.

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JOB NO. 15-0353

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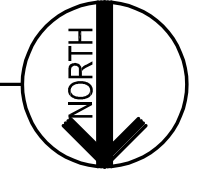
ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
ENLARGED  
FIRST FLOOR PLAN

DWG. NO.  
A1.1.1

AREA "A" ENLARGED  
FIRST FLOOR PLAN  
SCALE: 1/4" = 1'-0"





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PROJECT NAME:  
TROY CROSSING  
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BUILDING # 5

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JOB NO. 15-0353

D.B./C.B. R.A./P.D.

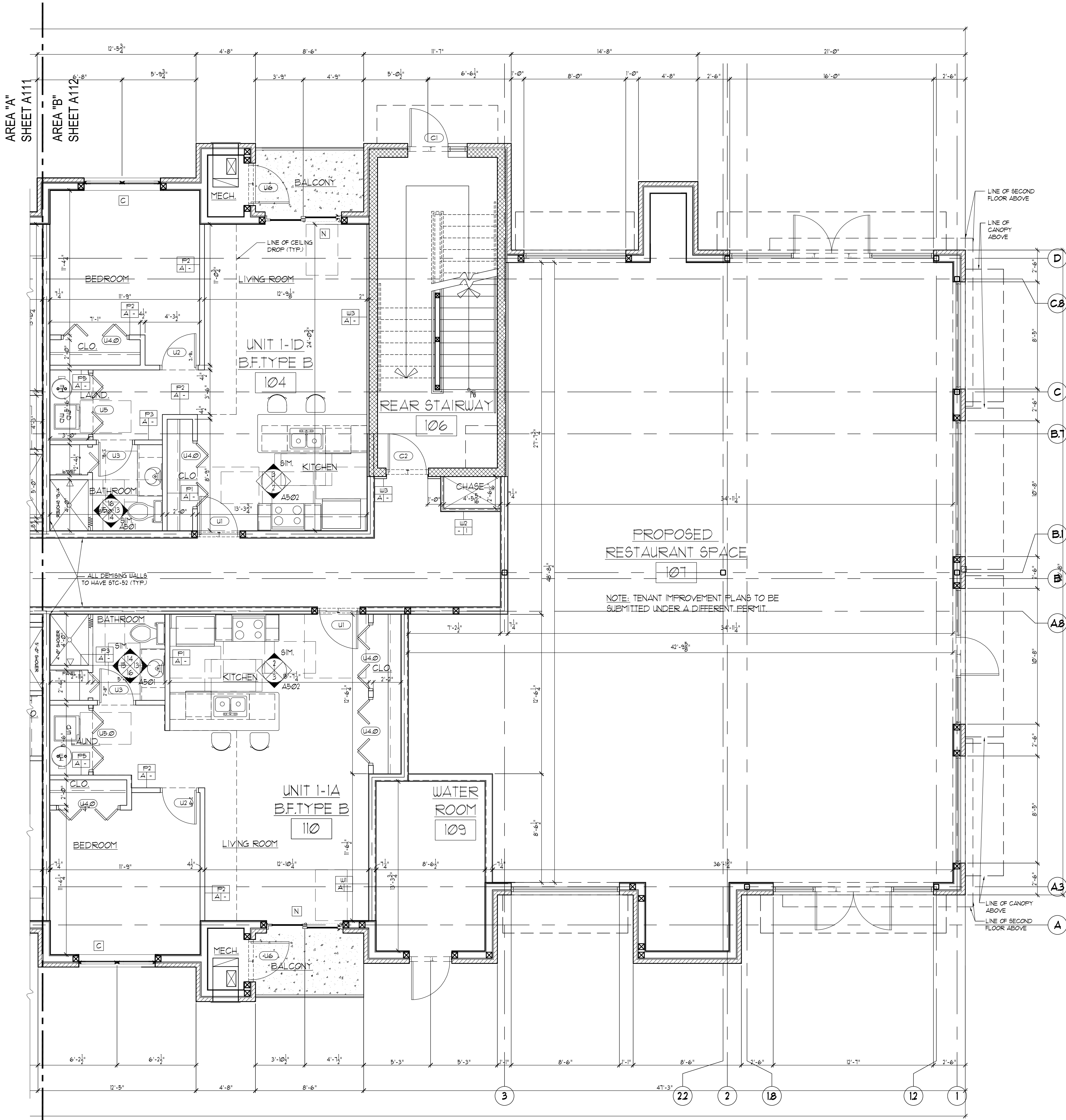
ISSUANCES

NO	DESCRIPTION	DATE
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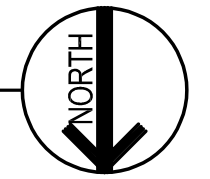
SHEET TITLE  
ENLARGED  
FIRST FLOOR PLAN

DWG. NO.

A1.1.2



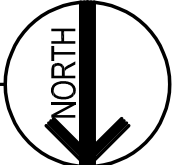
KEY MAP  
SCALE: N.T.S.



STUDIO A, BF TYPE B AREA = 614 SF.
STUDIO B, BF TYPE B AREA = 631 SF.
UNIT 1-1A, BF TYPE B 1 BED RM, 1 BATH RM, AREA = 144 SF.
UNIT 1-1D, BF TYPE B 1 BED RM, 1 BATH RM, AREA = 111 SF.
UNIT 2-2A, BF TYPE B 2 BED RM, 2 BATH RM, AREA = 951 SF.
UNIT 2-2B, TYPE B 2 BED RM, 2 BATH RM, AREA = 1031 SF.
UNIT 2-2C, BF TYPE B 2 BED RM, 2 BATH RM, AREA = 1023 SF.
UNIT 2-2E 2 BED RM, 1 OFFICE 2 BATH RM, AREA = 1218 SF.

AREA "B" ENLARGED  
FIRST FLOOR PLAN

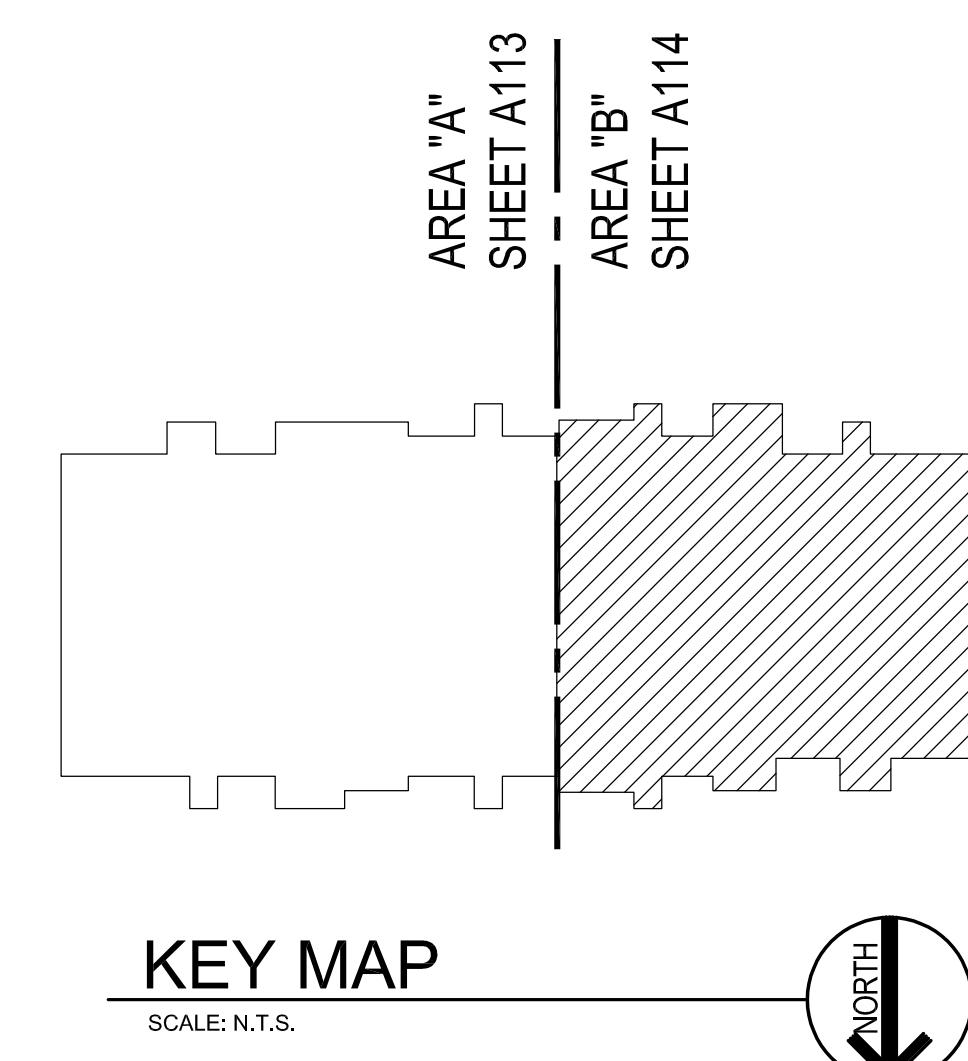
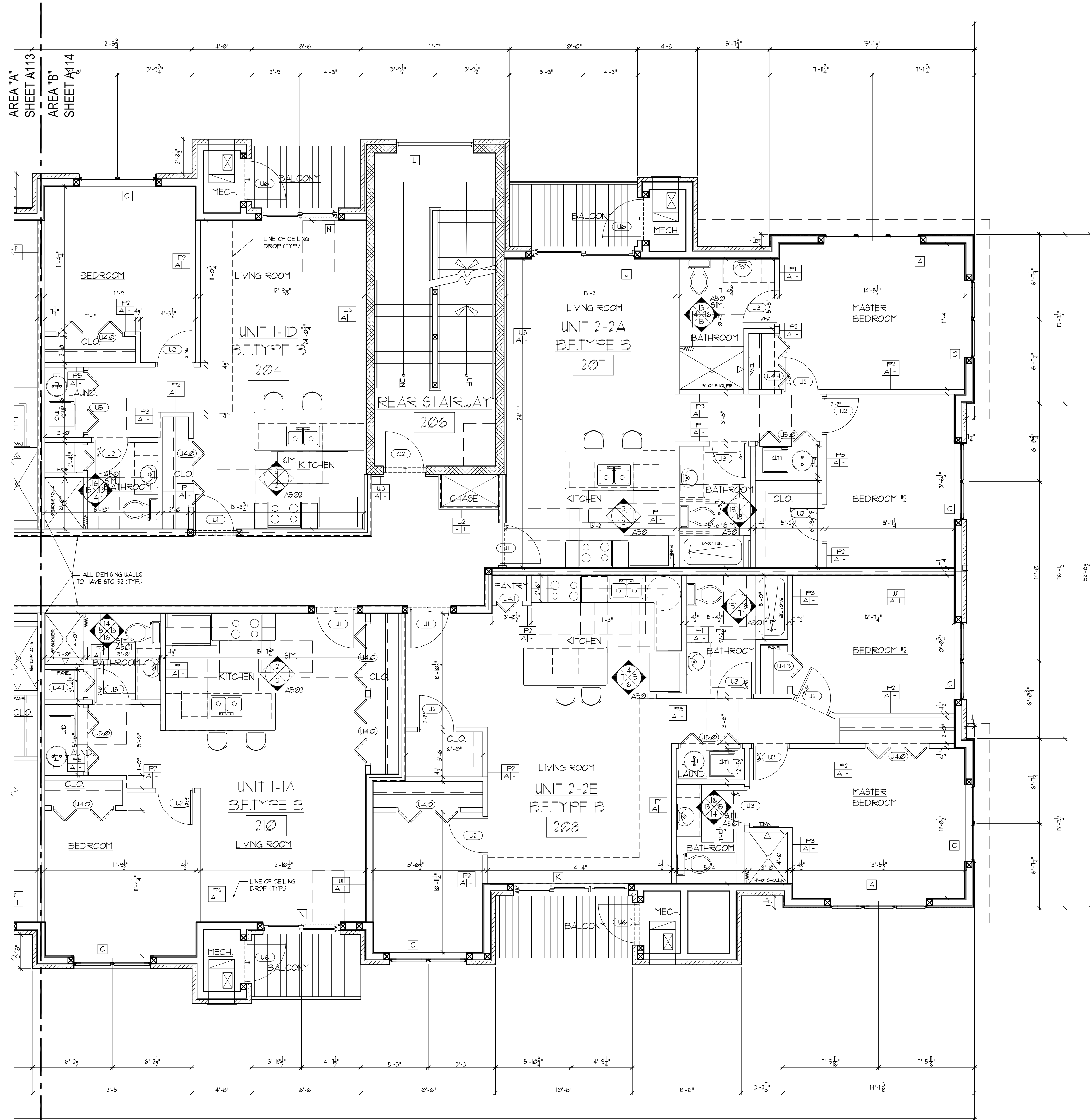
SCALE: 1/4" = 1'-0"











STUDIO A B.F. TYPE B AREA = 614 SF.
STUDIO B B.F. TYPE B AREA = 631 SF.
UNIT 1-1A B.F. TYPE B 1 BED RM, 1 BATH RM, AREA = 144 SF.
UNIT 1-1D B.F. TYPE B 2 BED RM, 2 BATH RM, AREA = 391 SF.
UNIT 2-2A B.F. TYPE B 2 BED RM, 2 BATH RM, AREA = 1031 SF.
UNIT 2-2B TYPE B 2 BED RM, 2 BATH RM, AREA = 1031 SF.
UNIT 2-2C B.F. TYPE B 2 BED RM, 2 BATH RM, AREA = 1031 SF.
UNIT 2-2E 2 BED RM, 1 OFFICE 2 BATH RM, AREA = 128 SF.

1  
A114

AREA "B" ENLARGED  
SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

NORTH

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PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

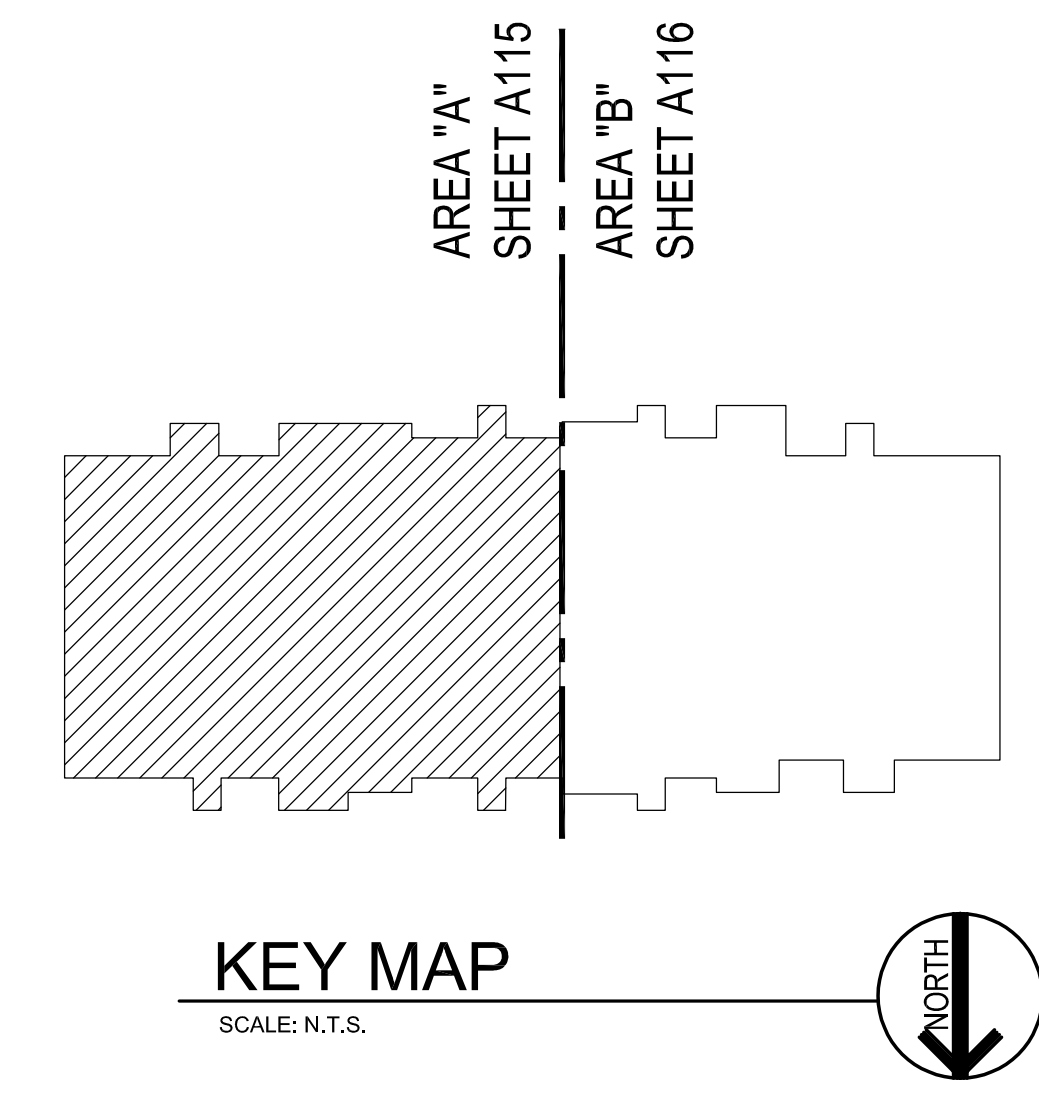
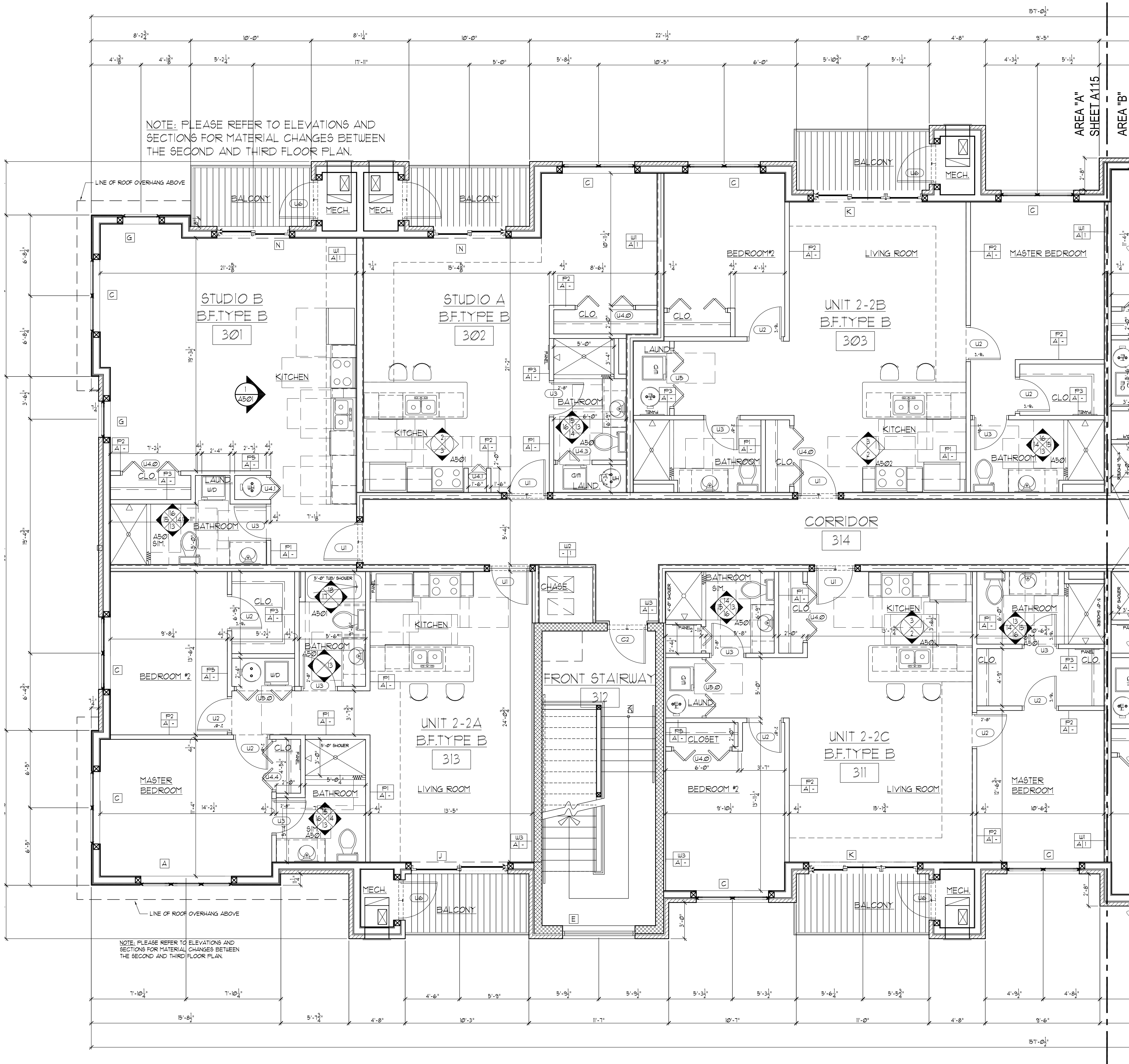
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JOB NO.	15-0353
D.B./C.B.	R.A./P.D.
ISSUANCES	
NO	DESCRIPTION
1	REVIEW SET

SHEET TITLE  
ENLARGED  
SECOND FLOOR  
PLAN

DWG. NO.  
**A1.1.4**





STUDIO A, BF. TYPE B	AREA = 614 SF.
STUDIO B, BF. TYPE B	AREA = 631 SF.
UNIT 1-1A, BF. TYPE B	1 BED RM., 1 BATH RM., AREA = 144 SF.
UNIT 1-1D, BF. TYPE B	1 BED RM., 1 BATH RM., AREA = 111 SF.
UNIT 2-2A, BF. TYPE B	2 BED RM., 2 BATH RM., AREA = 951 SF.
UNIT 2-2B, TYPE B	2 BED RM., 2 BATH RM., AREA = 1031 SF.
UNIT 2-2C, BF. TYPE B	2 BED RM., 2 BATH RM., AREA = 1003 SF.
UNIT 2-2E	2 BED RM., 1 OFFICE, 2 BATH RM., AREA = 1218 SF.

1  
A115

AREA "A" ENLARGED  
THIRD FLOOR PLAN

SCALE: 1/4" = 1'-0"

NORTH

SMA

Serra Marko Associates

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248.457.6903  
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PROJECT NAME:  
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JOB NO.		15-0353
D.B./C.B.		R.A./P.D.
ISSUANCES		
NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

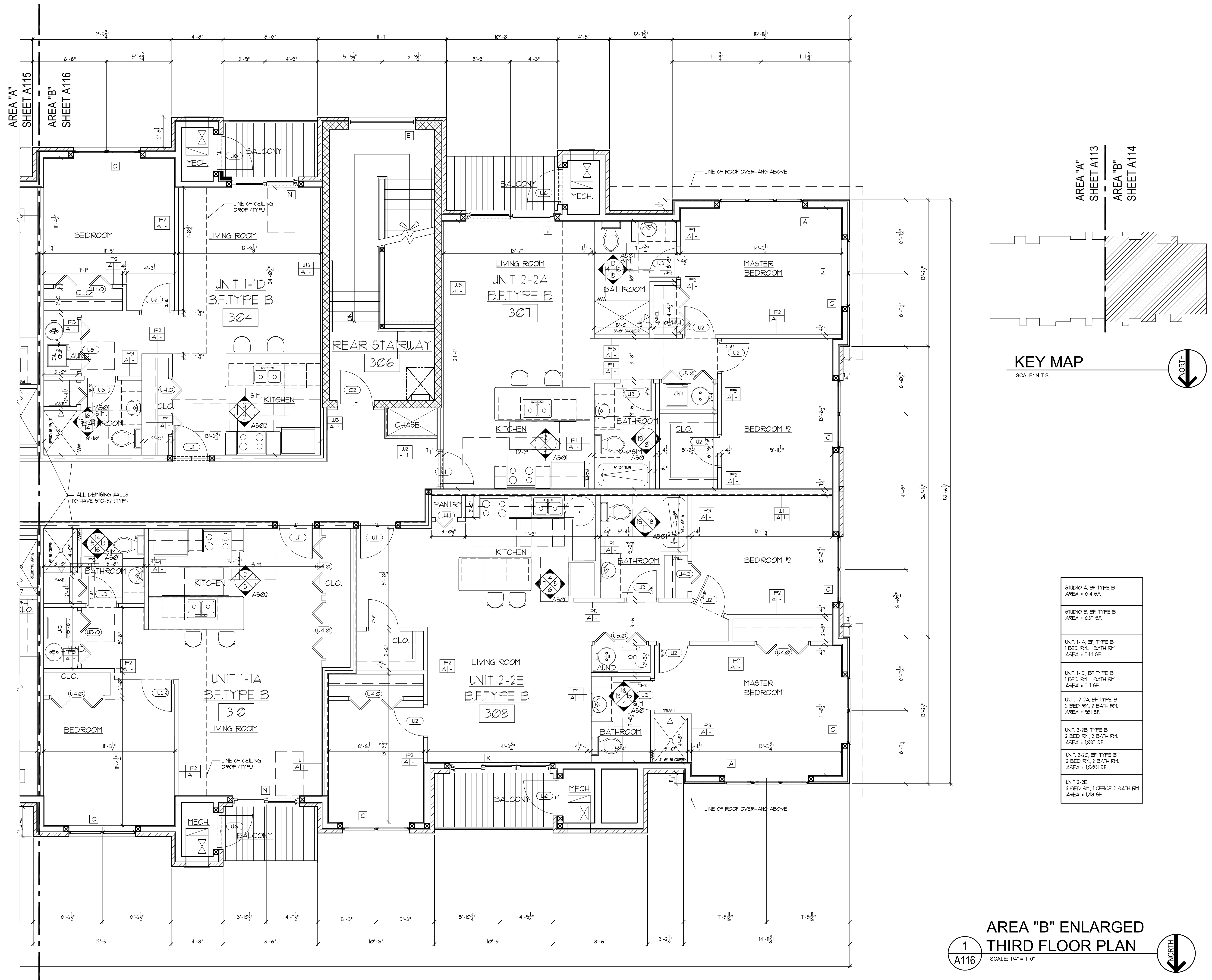
SHEET TITLE  
ENLARGED  
THIRD FLOOR  
PLAN





**189 E. Big Beaver, Ste 106  
Troy, MI 48083**

### A1.1.6





PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

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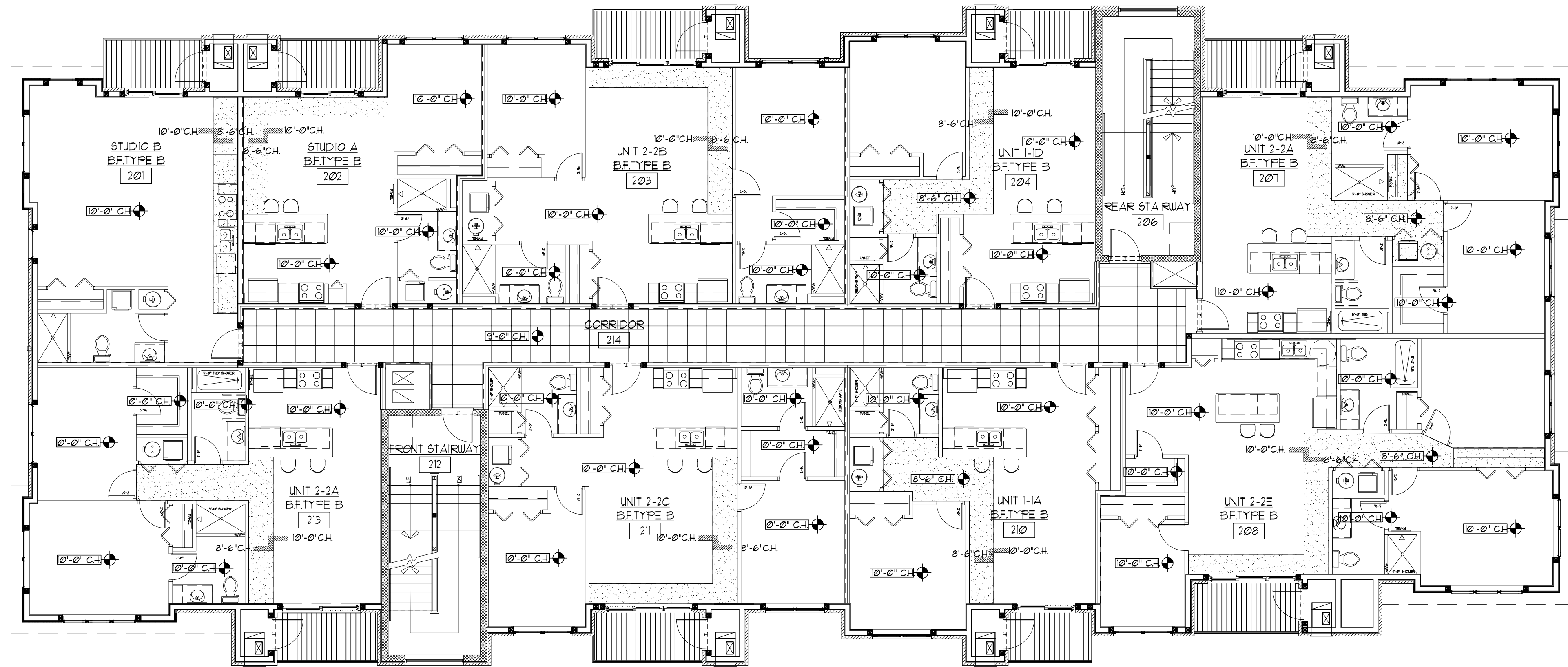
ISSUANCES

NO	DESCRIPTION	DATE
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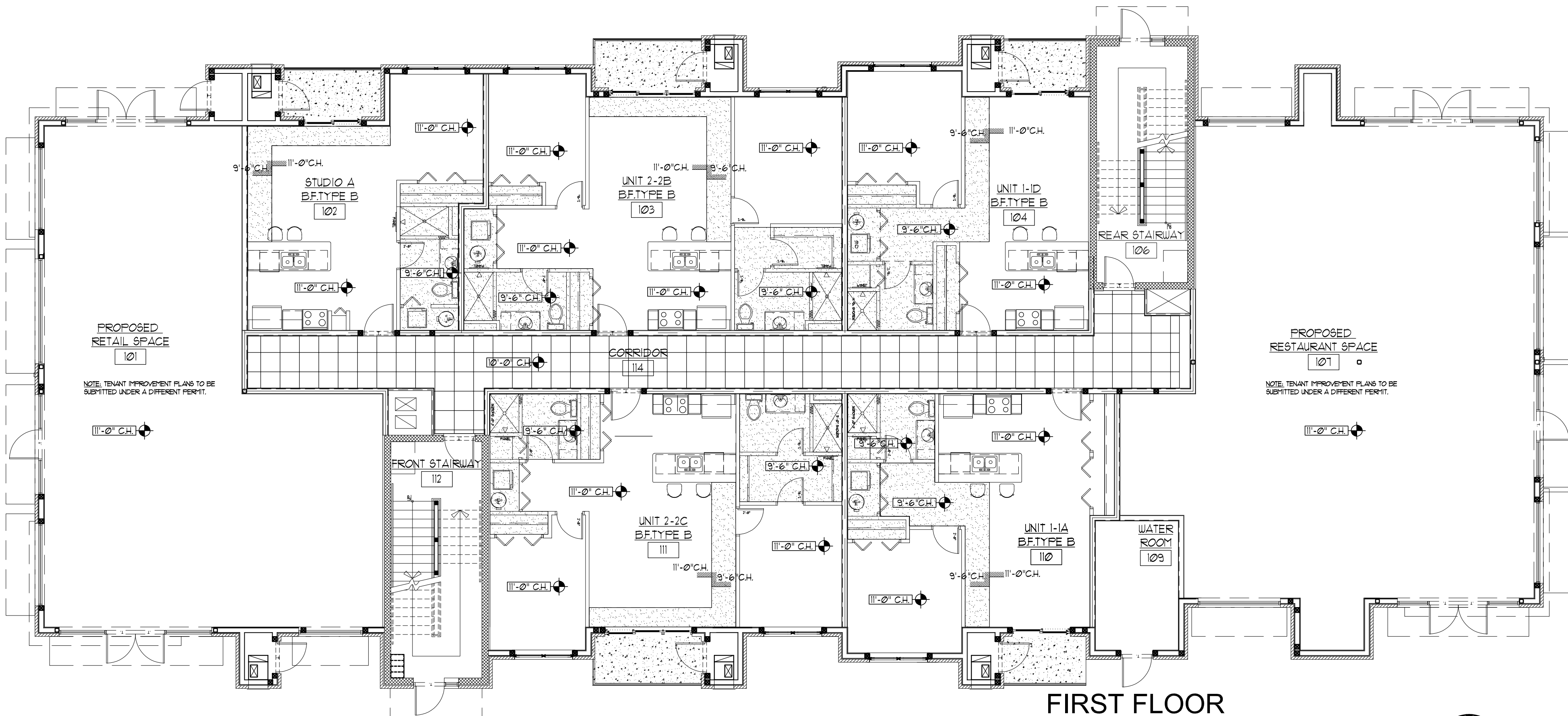
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FIRST AND SECOND  
FLOOR REFLECTED  
CEILING PLAN

DWG. NO.

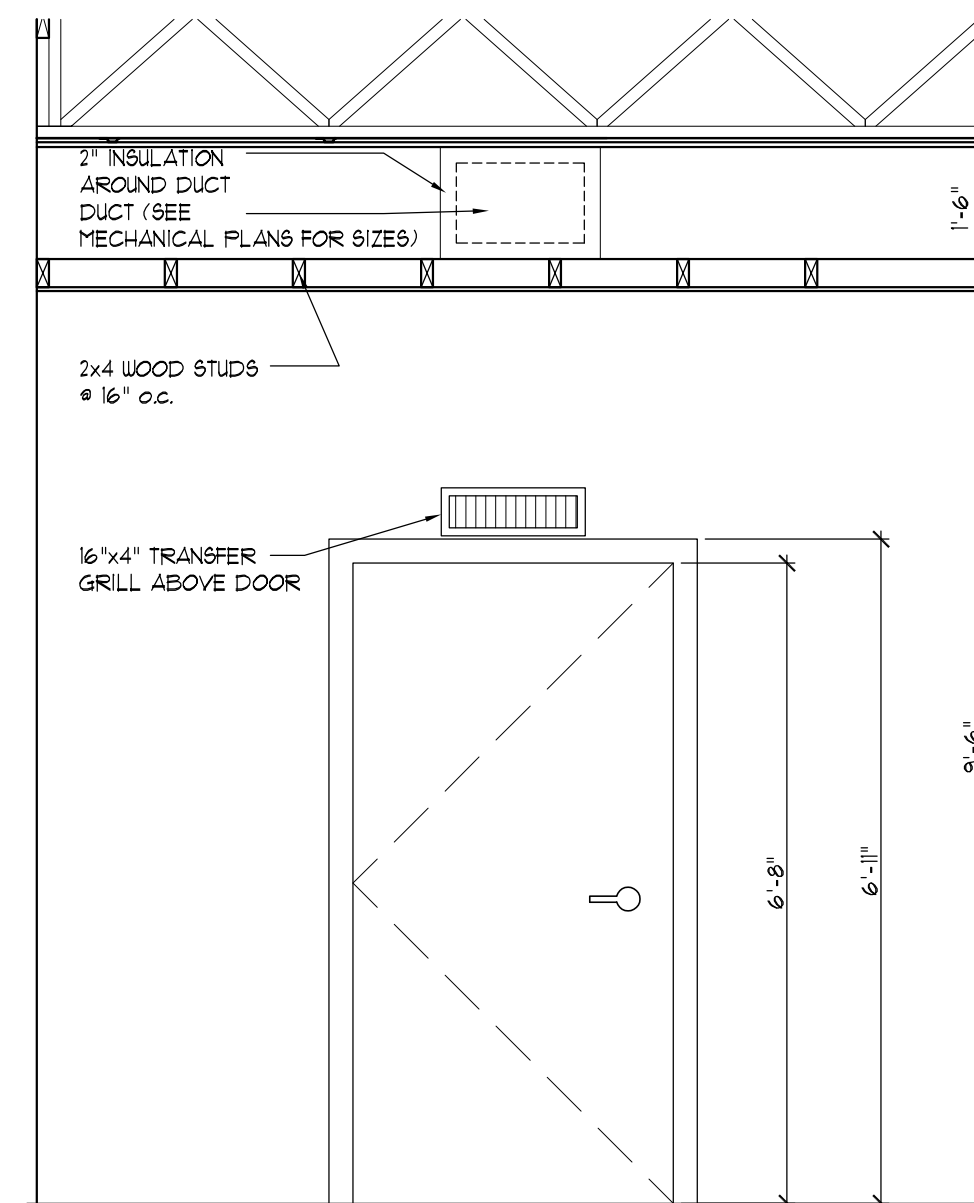
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2  
A121  
SECOND FLOOR REFLECTED  
CEILING PLAN  
SCALE: 1/8" = 1'-0"



1  
A121  
FIRST FLOOR  
REFLECTED CEILING PLAN  
SCALE: 1/8" = 1'-0"



3  
A121  
TYPICAL SECTION THROUGH  
CEILING DROP  
SCALE: 1/2" = 1'-0"



PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

REVIEW SET  
12-23-2021

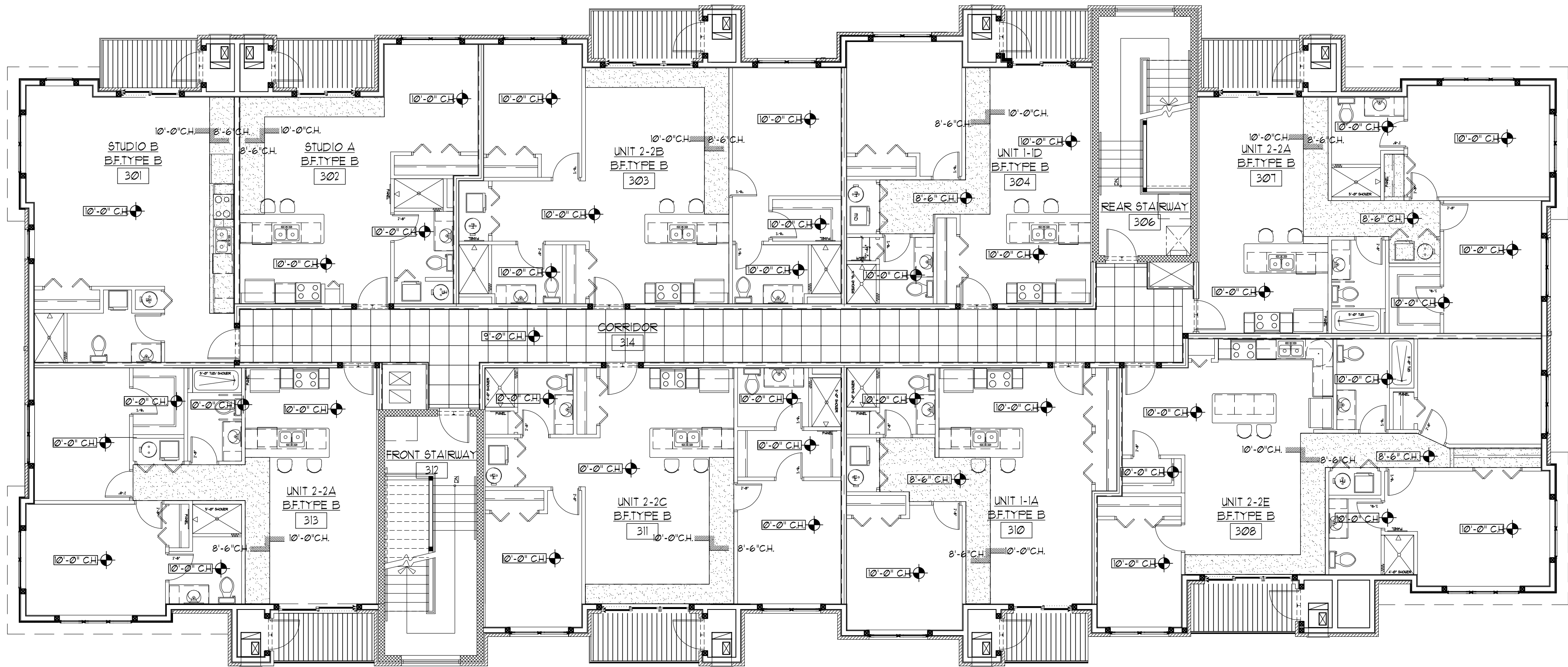
ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATION OF ALL DIMENSIONS.

JOB NO.	15-0353	
D.B./C.B	R.A./P.D	
ISSUANCES		
NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
THIRD FLOOR  
REFLECTED CEILING  
PLAN

DWG. NO.  
A1.2.2



THIRD FLOOR REFLECTED  
CEILING PLAN

1  
A122

SCALE: 1/8" = 1'-0"

NORTH



PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

REVIEW SET  
12-23-2021

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JOB NO. 15-0353

D.B/C.B R.A./P.D

## ISSUANCES

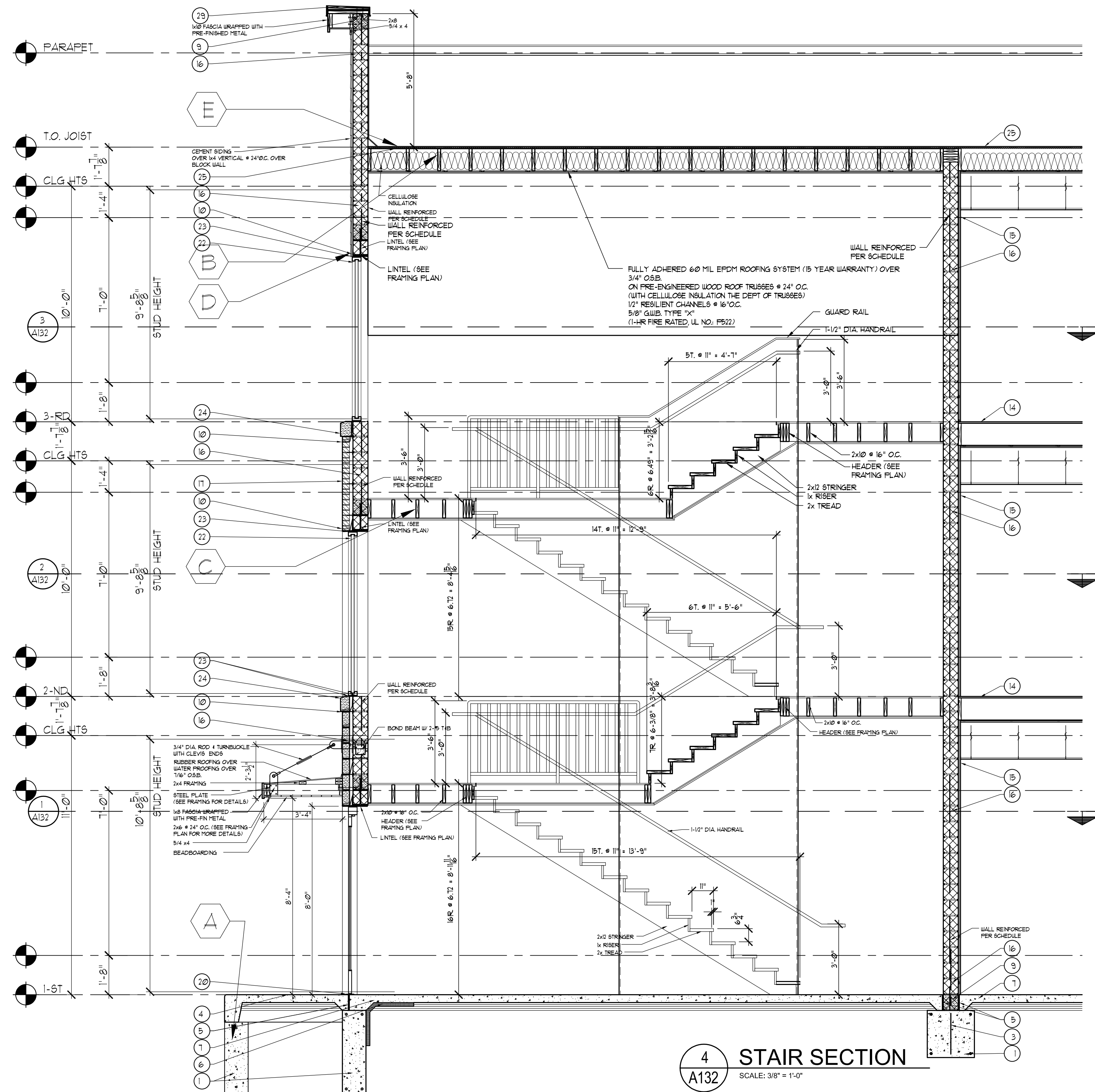
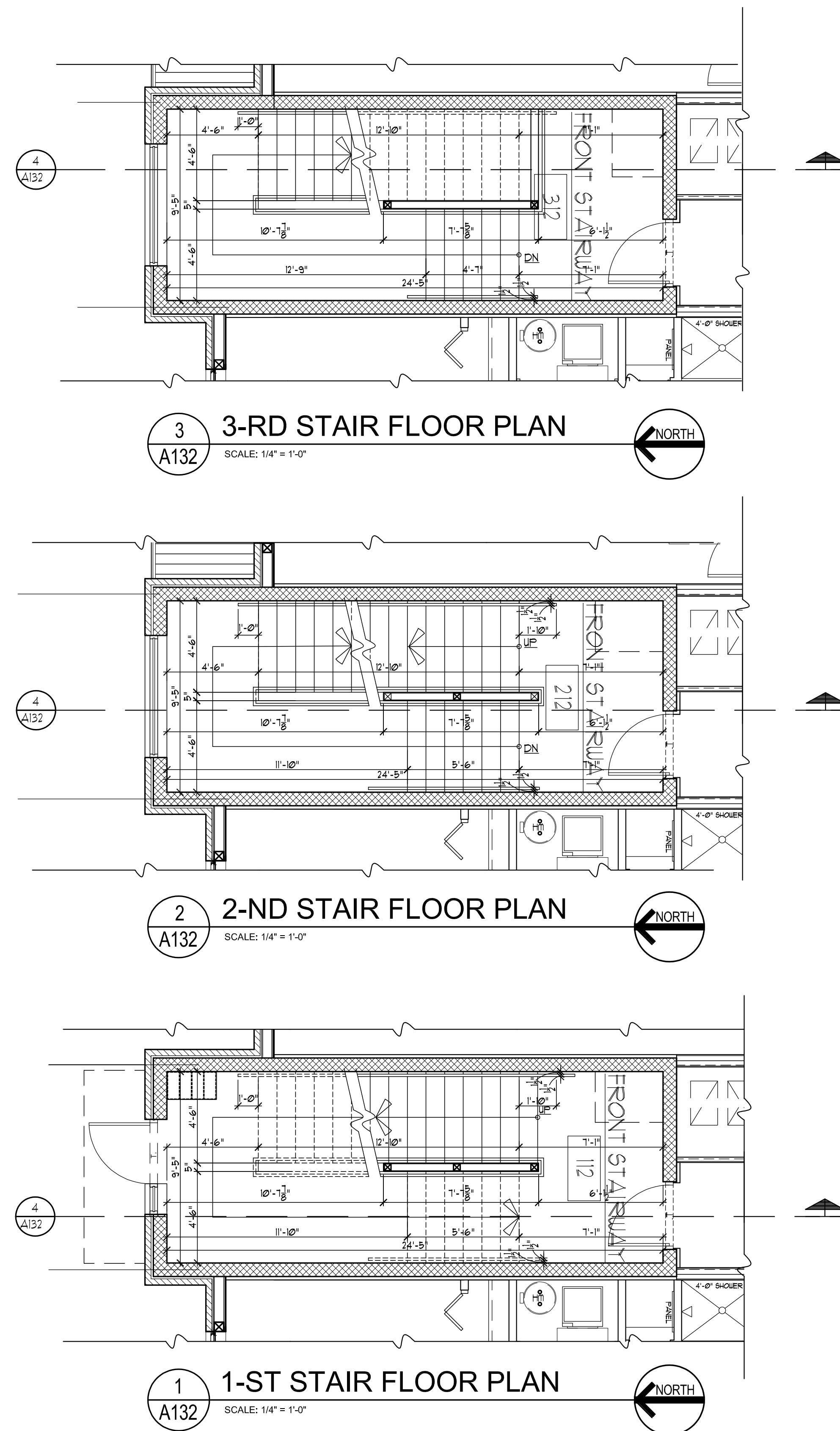
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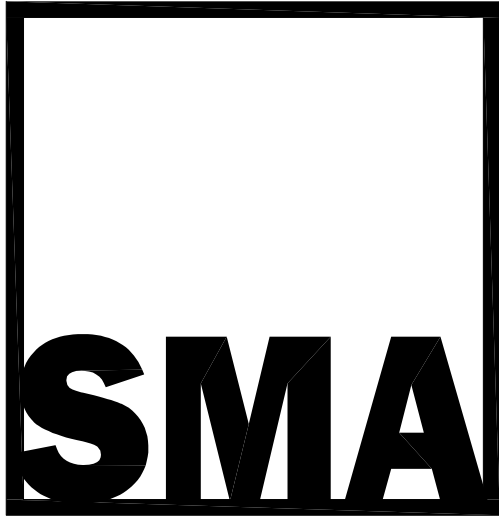
SHEET TITLE  
**STAIR DETAILS**

DWG. NO.

**A1.3.2**







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PROJECT NAME:  
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12-23-2021

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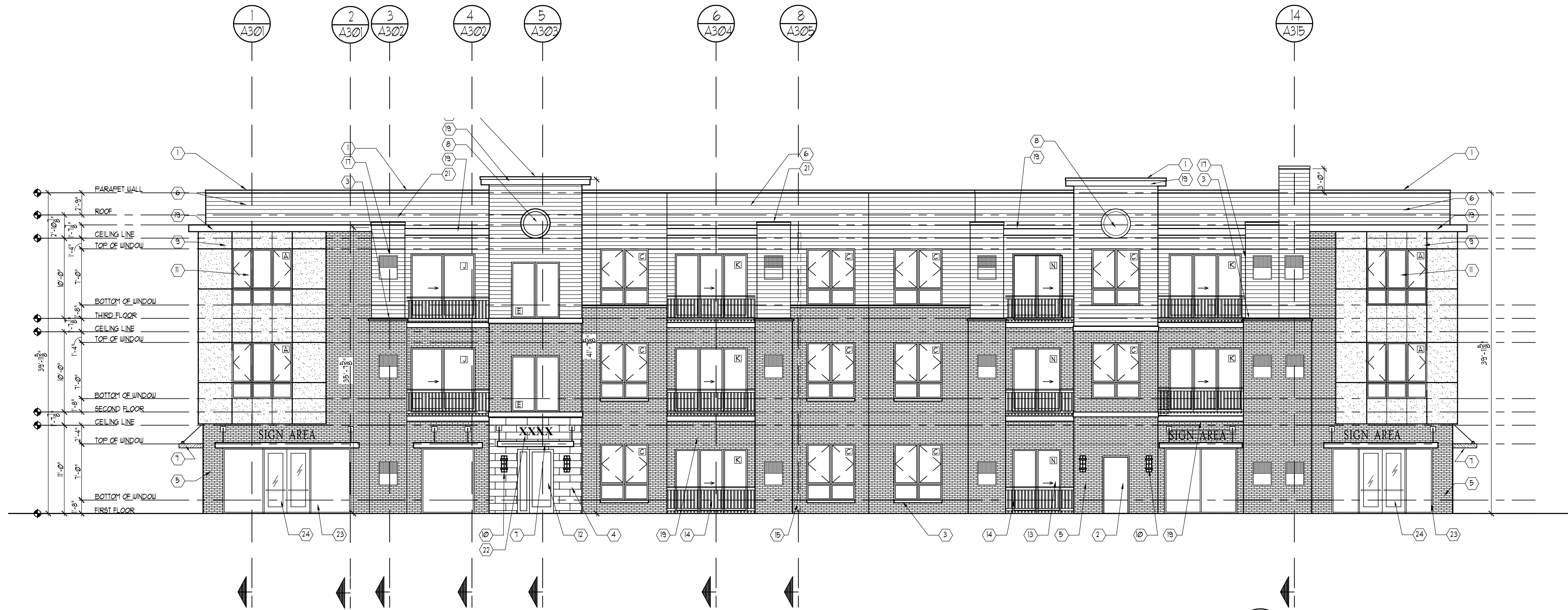
ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
BUILDING  
ELEVATIONS

DWG. NO.

A2.0.1

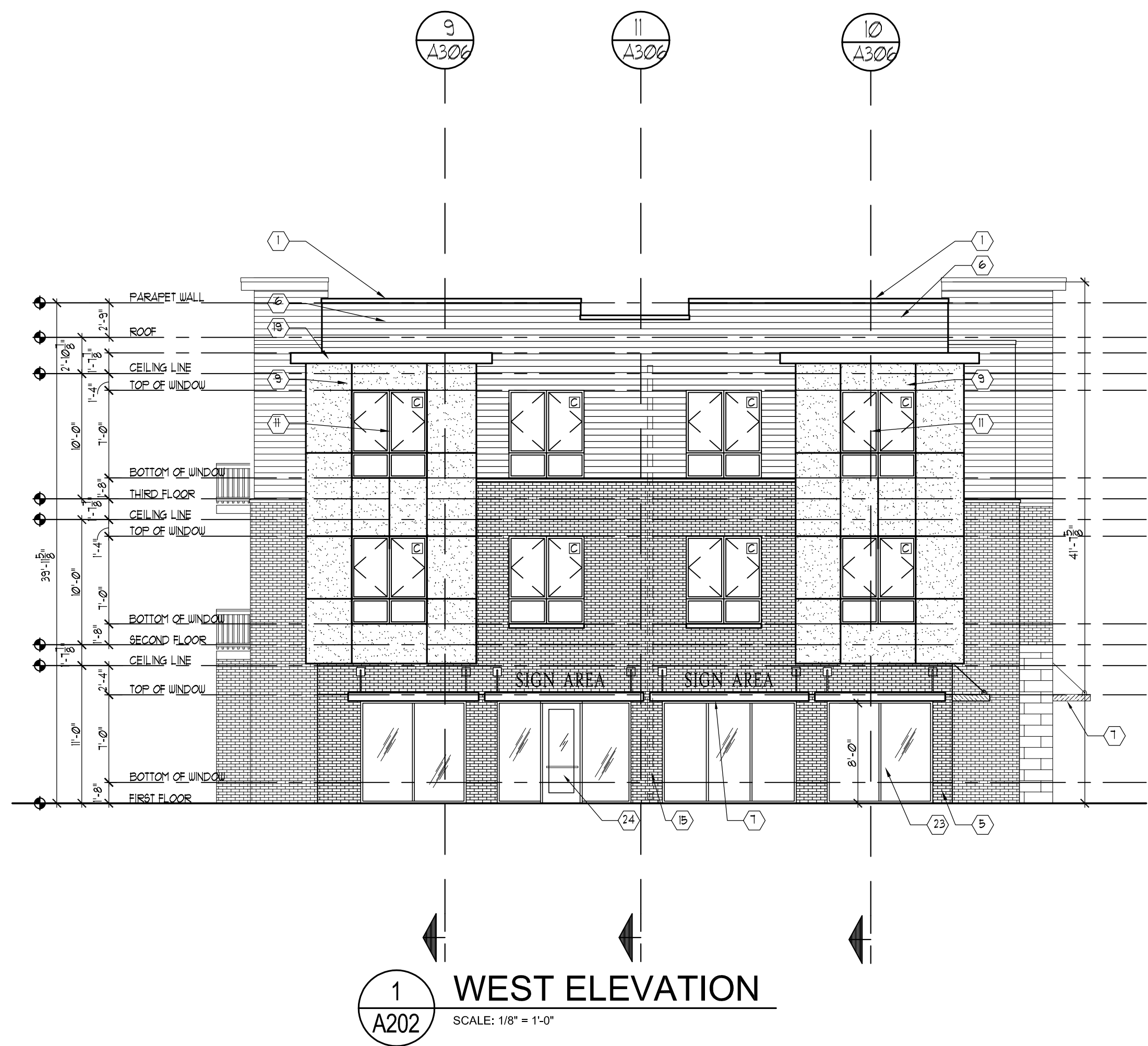


APARTMENT BUILDING ELEVATION KEYED NOTES

- PRE-FIN. METAL COPING.
- 4M DOOR
- LIMESTONE OR PRE-CAST GILL
- BURNISHED BLOCK
- BRICK
- CEMENT SIDING (COLOR TBD.)
- CANOPY
- DECORATIVE ELEMENT
- PRE-FINISHED METAL PANEL
- DECORATIVE WALL MOUNTED LIGHT FIXTURE.
- INSUL. GLASS SET IN ALUM. FRAME WINDOW
- INSUL. TEMP. GLASS SET IN ALUM. FRAME DOOR
- INSUL. GLASS SET IN ALUM. FRAME SLIDING DOOR
- ALUM. RAILING (WROUGHT IRON APPEARANCE)
- DOWNSPOUT (SEE PLUMBING FOR SIZE)
- NOT USED
- MECHANICAL SHAFT
- NOT USED
- FASCIA WRAPPED IN PRE-FINISHED METAL (SEE SECTIONS FOR SIZES)
- HVAC GRILLE (SEE MECHANICAL PLANS)
- DRIP EDGE METAL COPING
- BUILDING ADDRESS NUMBERS TO BE A MINIMUM OF 4" HIGH, WITH A MINIMUM STROKE OF .05" AND IN A COLOR THAT CONTRASTS THE BACKGROUND.
- TEMPERED STOREFRONT GLASS WINDOW SET IN ALUMINUM FRAME
- TEMPERED STOREFRONT GLASS DOOR SET IN ALUMINUM FRAME







APARTMENT BUILDING ELEVATION KEYED NOTES

- 1 PRE-FIN METAL COPING.
- 2 HM DOOR
- 3 LIMESTONE OR PRE-CAST SILL
- 4 BURNISHED BLOCK
- 5 BRICK
- 6 CEMENT SIDING (COLOR TBD.)
- 7 CANOPY
- 8 DECORATIVE ELEMENT
- 9 PRE-FINISHED METAL PANEL
- 10 DECORATIVE WALL MOUNTED LIGHT FIXTURE.
- 11 INSUL. GLASS SET IN ALUM. FRAME WINDOW.
- 12 INSUL. TEMP. GLASS SET IN ALUM. FRAME DOOR.
- 13 INSUL. GLASS SET IN ALUM. FRAME SLIDING DOOR
- 14 ALUMN. RAILING (WROUGHT IRON APPEARANCE)
- 15 DOWNSPOUT (SEE PLUMBING FOR SIZE)
- 16 NOT USED
- 17 MECHANICAL SHAFT
- 18 NOT USED
- 19 FASCIA UNWRAPPED IN PRE-FINISHED METAL (SEE SECTIONS FOR SIZES)
- 20 HVAC GRILLE (SEE MECHANICAL PLANS)
- 21 DRIP EDGE METAL COPING
- 22 BUILDING ADDRESS NUMBERS TO BE A MINIMUM OF 4" HIGH, WITH A MINIMUM STROKE OF .05" AND IN A COLOR THAT CONTRASTS THE BACKGROUND.
- 23 TEMPERED STOREFRONT GLASS WINDOW SET IN ALUMINUM FRAME
- 24 TEMPERED STOREFRONT GLASS DOOR SET IN ALUMINUM FRAME

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PROJECT NAME:  
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JOB NO. 15-0353

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ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
BUILDING  
ELEVATIONS

DWG. NO.  
A2.0.2



APARTMENT BUILDING ELEVATION KEYED NOTES

- 1 PRE-FIN. METAL COPING.  
2 HM DOOR  
3 LIMESTONE OR PRE-CAST SILL  
4 BURNISHED BLOCK  
5 BRICK  
6 CEMENT SIDING (COLOR TBD.)  
7 CANOPY  
8 DECORATIVE ELEMENT  
9 PRE-FINISHED METAL PANEL  
10 DECORATIVE WALL MOUNTED LIGHT FIXTURE.  
11 INSUL. GLASS SET IN ALUM. FRAME WINDOW.  
12 INSUL. TEMP. GLASS SET IN ALUM. FRAME DOOR.  
13 INSUL. GLASS SET IN ALUM. FRAME SLIDING DOOR  
14 ALUMIN. RAILING (WROUGHT IRON APPEARANCE)  
15 DOWNSPOUT (SEE PLUMBING FOR SIZE)  
16 NOT USED  
17 MECHANICAL SHAFT  
18 NOT USED  
19 FASCIA WRAPPED IN PRE-FINISHED METAL (SEE SECTIONS FOR SIZES)  
20 HVAC GRILLE (SEE MECHANICAL PLANS)  
21 DRIP EDGE METAL COPING  
22 BUILDING ADDRESS NUMBERS TO BE A MINIMUM OF 4" HIGH, WITH A MINIMUM STROKE OF 0.5" AND IN A COLOR THAT CONTRASTS THE BACKGROUND.  
23 TEMPERED STOREFRONT GLASS WINDOW SET IN ALUMINUM FRAME  
24 TEMPERED STOREFRONT GLASS DOOR SET IN ALUMINUM FRAME



1 ENLARGED NORTH ELEVATION  
A203 SCALE: 1/4" = 1'-0"

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JOB NO.	15-0353
D.B./C.B.	R.A./P.D.
ISSUANCES	
NO	DESCRIPTION
1	REVIEW SET

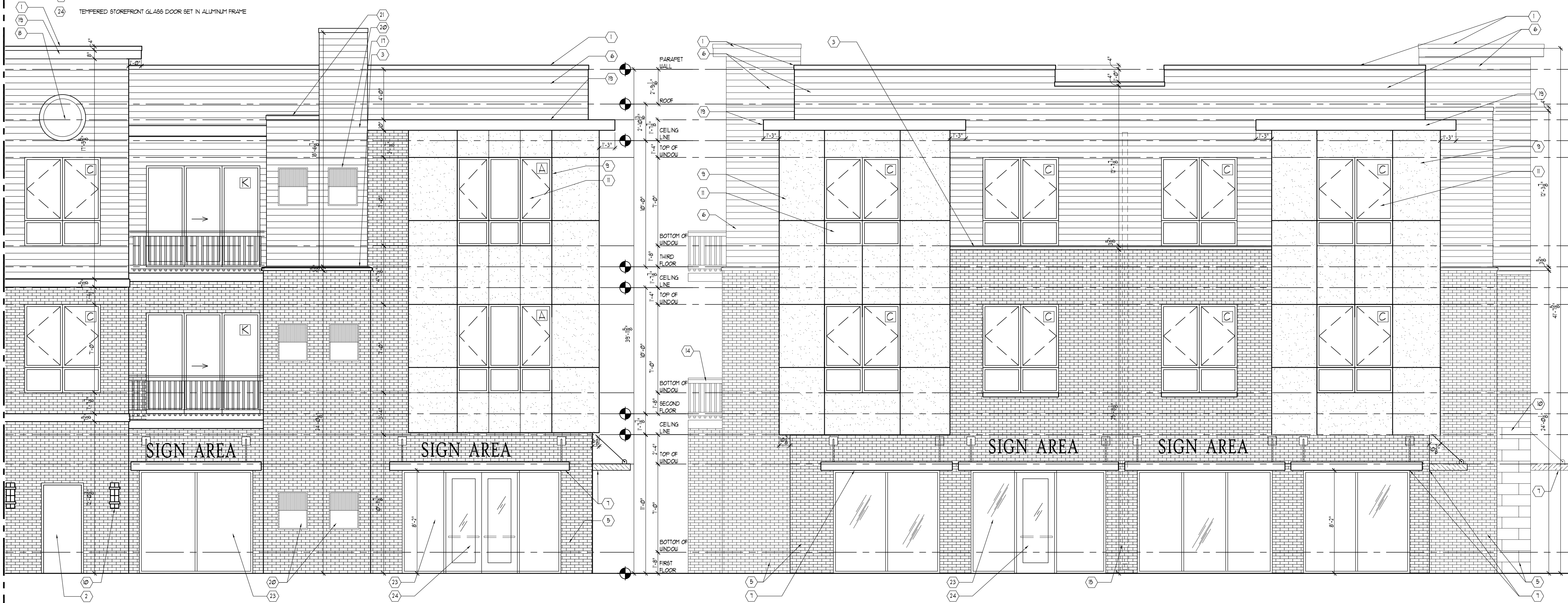
SHEET TITLE  
ENLARGED  
BUILDING  
ELEVATIONS

DWG. NO.  
A2.0.3  
of



MATCH LINE

- APARTMENT BUILDING ELEVATION KEYED NOTES
- 1 PRE-FIN. METAL COPING
  - 2 HM DOOR
  - 3 LIMESTONE OR PRE-CAST SILL
  - 4 BURNISHED BLOCK
  - 5 BRICK
  - 6 CEMENT SIDING (COLOR TBD)
  - 7 CANOPY
  - 8 DECORATIVE ELEMENT
  - 9 PRE-FINISHED METAL PANEL
  - 10 DECORATIVE WALL MOUNTED LIGHT FIXTURE
  - 11 INSUL. GLASS SET IN ALUM. FRAME WINDOW
  - 12 INSUL. TEMP. GLASS SET IN ALUM. FRAME DOOR
  - 13 INSUL. GLASS SET IN ALUM. FRAME SLIDING DOOR
  - 14 ALUMN. RAILING (WROUGHT IRON APPEARANCE)
  - 15 DOWNSPOUT (SEE PLUMBING FOR SIZE)
  - 16 NOT USED
  - 17 MECHANICAL SHAFT
  - 18 NOT USED
  - 19 FASCIA WRAPPED IN PRE-FINISHED METAL (SEE SECTIONS FOR SIZES)
  - 20 HVAC GRILLE (SEE MECHANICAL PLANS)
  - 21 DRIP EDGE METAL COPING
  - 22 BUILDING ADDRESS NUMBERS TO BE A MINIMUM OF 4" HIGH, WITH A MINIMUM STROKE OF 0.5" AND IN A COLOR THAT CONTRASTS THE BACKGROUND.
  - 23 TEMPERED STOREFRONT GLASS WINDOW SET IN ALUMINUM FRAME
  - 24 TEMPERED STOREFRONT GLASS DOOR SET IN ALUMINUM FRAME



1 ENLARGED NORTH ELEVATION  
SCALE: 1/4" = 1'-0"

2 ENLARGED EAST ELEVATION  
SCALE: 1/4" = 1'-0"

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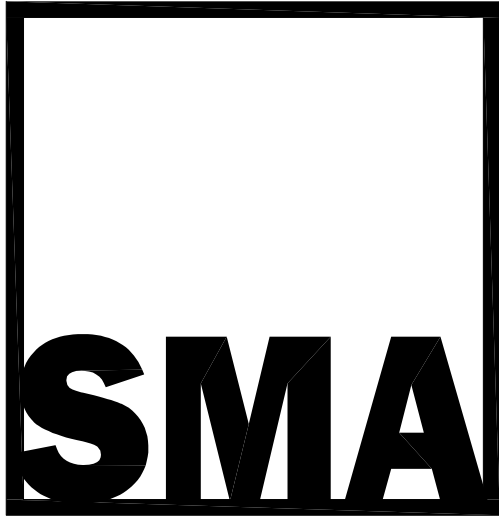
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D.B/C.B	R.A./P.D	
ISSUANCES		
NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
ENLARGED  
BUILDING  
ELEVATIONS

DWG. NO.

A2.0.4





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ISSUANCES

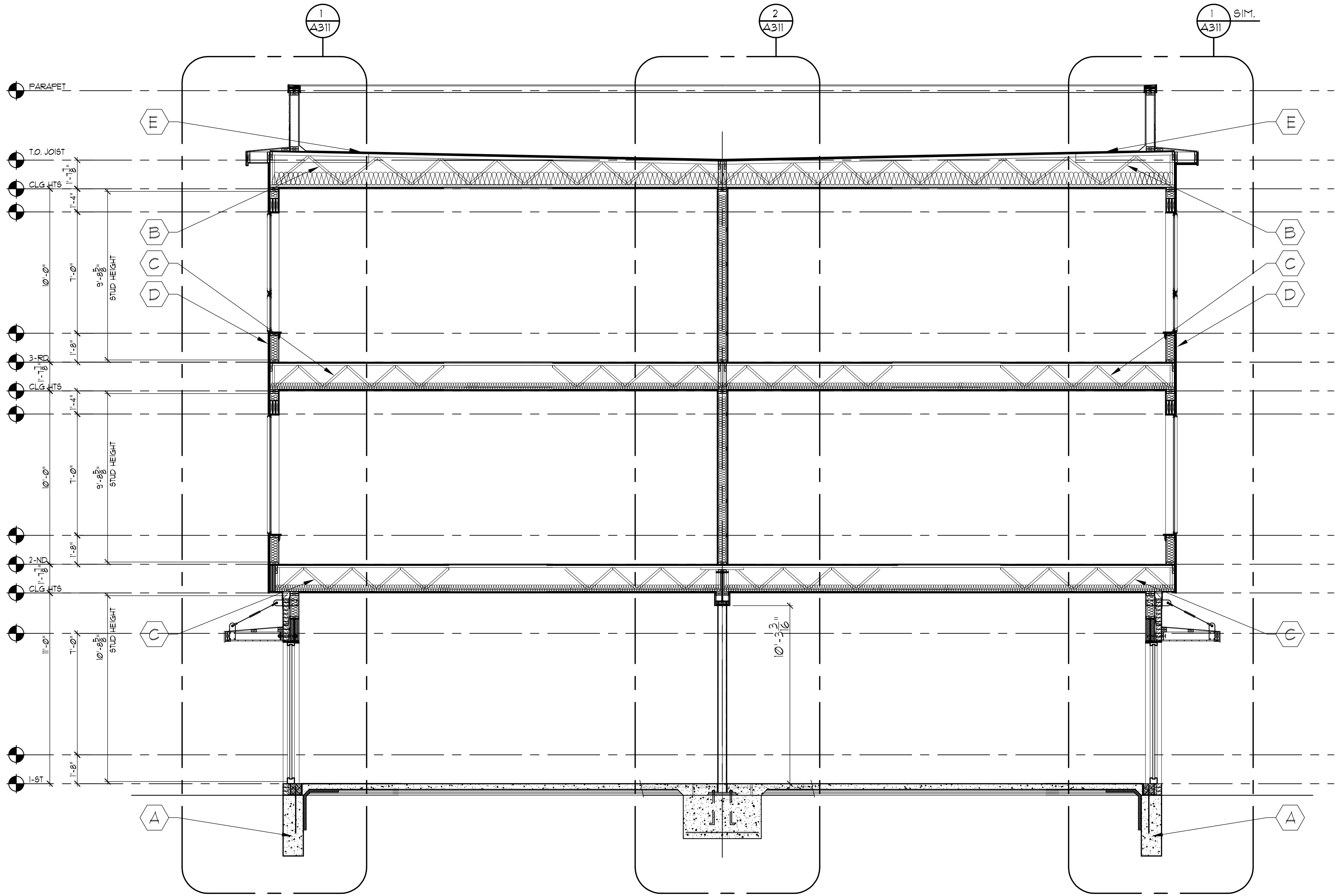
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1	REVIEW SET	12/23/21

SHEET TITLE  
BUILDING SECTIONS

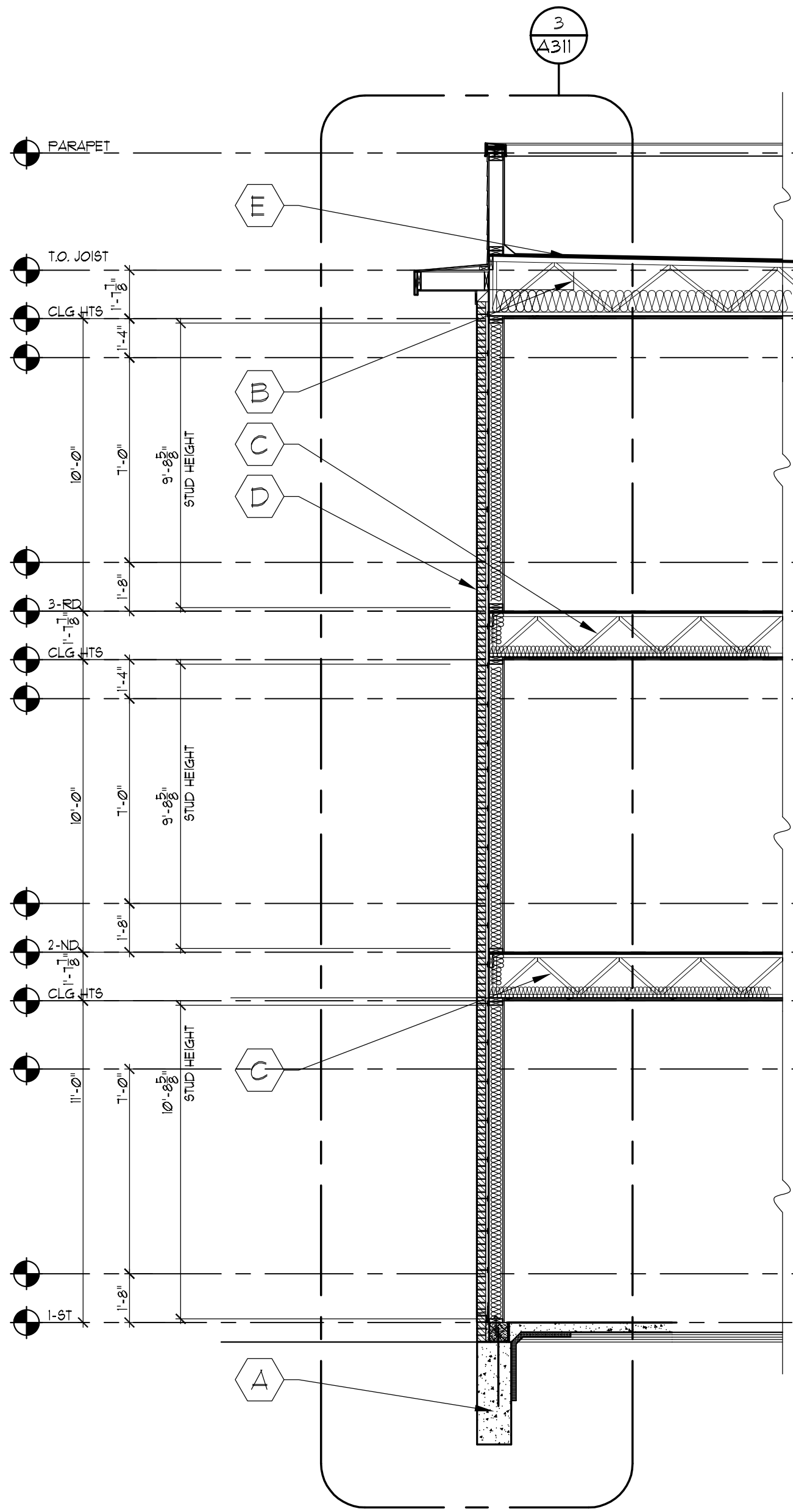
DWG. NO.  
A3.0.1  
of

SECTION KEYED NOTES:

- (A) FOUNDATION - BY OTHER
- (B) ROOF TRUSSES SYSTEM - SEE FRAMING PLAN FOR SIZE.
- (C) FLOOR TRUSSES SYSTEM - SEE FRAMING PLAN FOR SIZE.
- (D) EXTERIOR FINISH - SEE ELEVATIONS.
- (E) ROOFING MEMBRANE OVER INSULATION OVER ROOF SYSTEM
- (F) ROOF SUMP & OVERFLOW ROOF SUMP - SEE ROOF PLAN DETAILS.



1 BUILDING SECTIONS  
A301 SCALE: 1/4" = 1'-0"

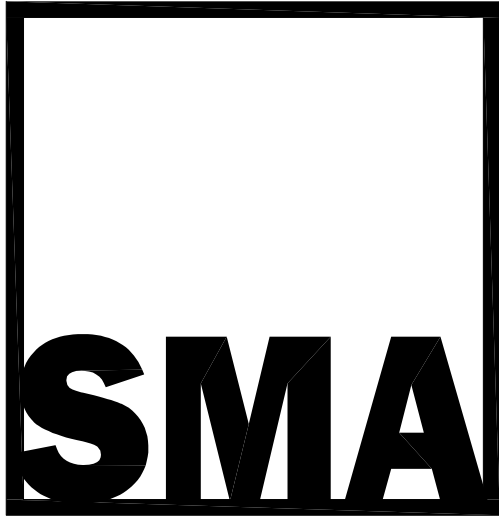


2 BUILDING SECTIONS  
A301 SCALE: 1/4" = 1'-0"









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JOB NO. 15-0353

D.B./C.B. R.A./P.D.

ISSUANCES

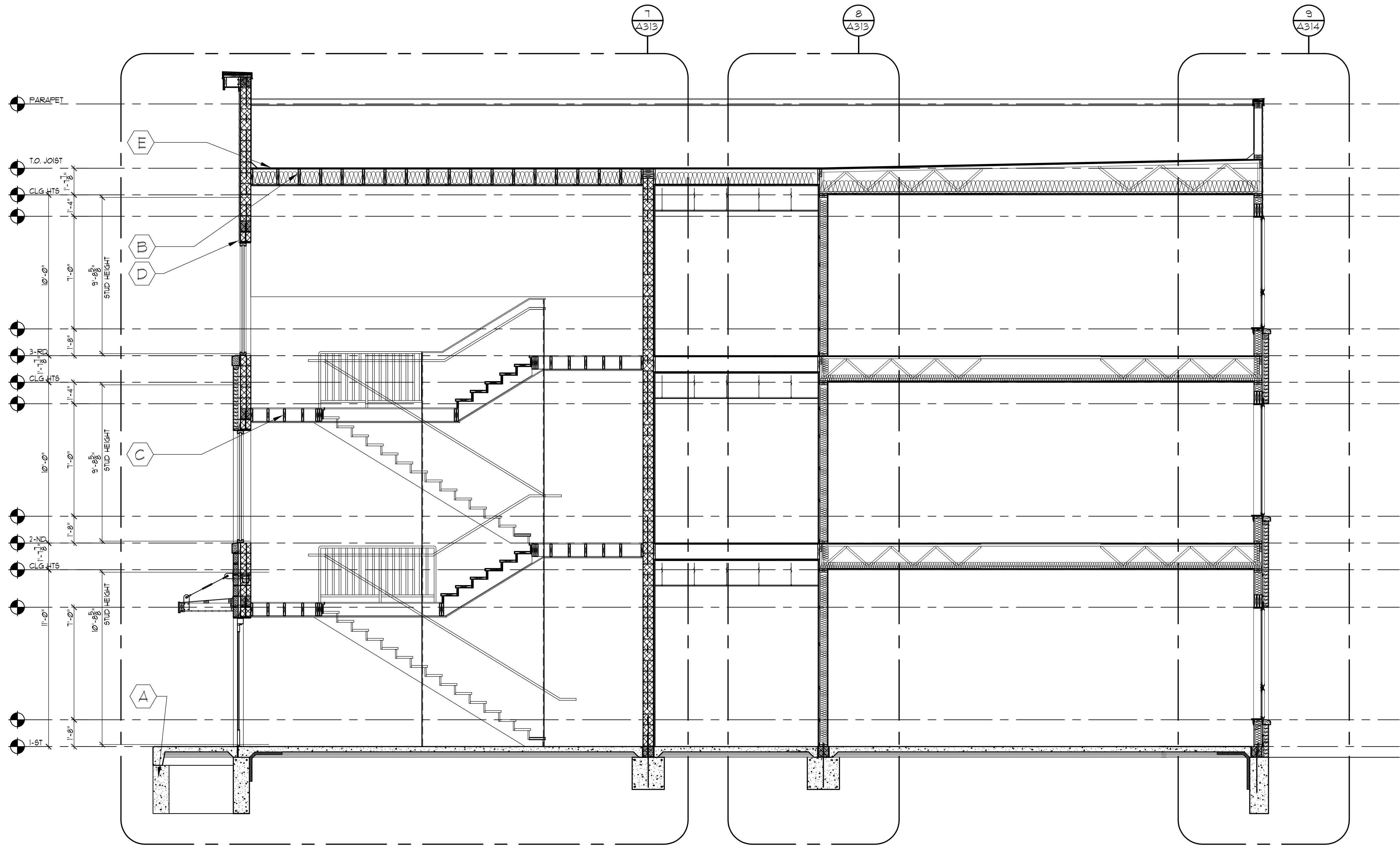
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SHEET TITLE  
BUILDING SECTIONS

DWG. NO.  
A3.0.3  
of

SECTION KEYED NOTES:

- (A) FOUNDATION - BY OTHER
- (B) ROOF TRUSSES SYSTEM - SEE FRAMING PLAN FOR SIZE.
- (C) FLOOR TRUSSES SYSTEM - SEE FRAMING PLAN FOR SIZE.
- (D) EXTERIOR FINISH - SEE ELEVATIONS.
- (E) ROOFING MEMBRANE OVER INSULATION OVER ROOF SYSTEM
- (F) ROOF SUMP & OVERFLOW ROOF SUMP - SEE ROOF PLAN DETAILS.



5 BUILDING SECTIONS  
A303 SCALE: 1/4" = 1'-0"





REVIEW SET  
12-23-2021

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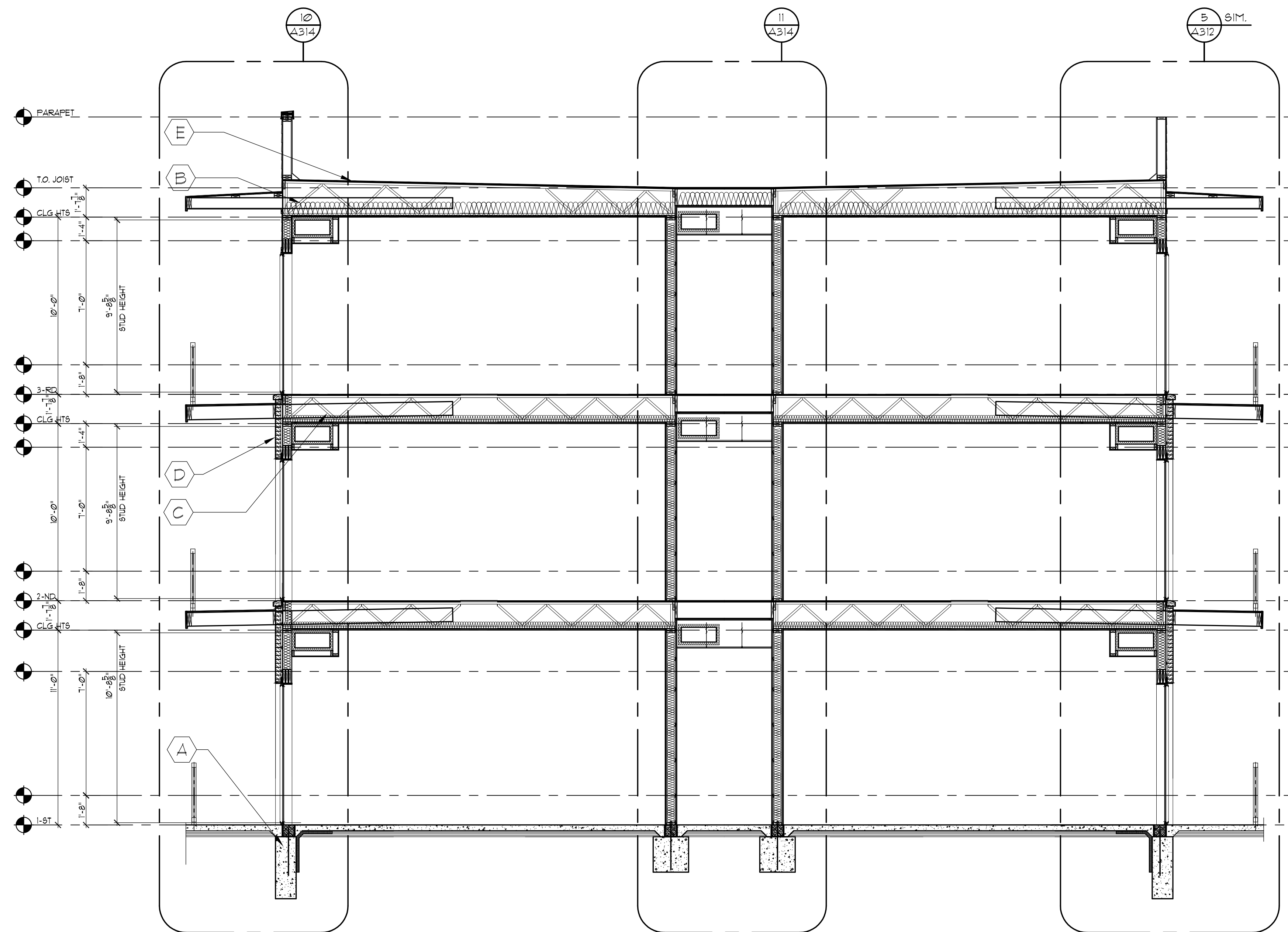
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D.B/C.B	R.A./P.D	
ISSUANCES		
NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

DWG. NO.

**A3.0.4**

of

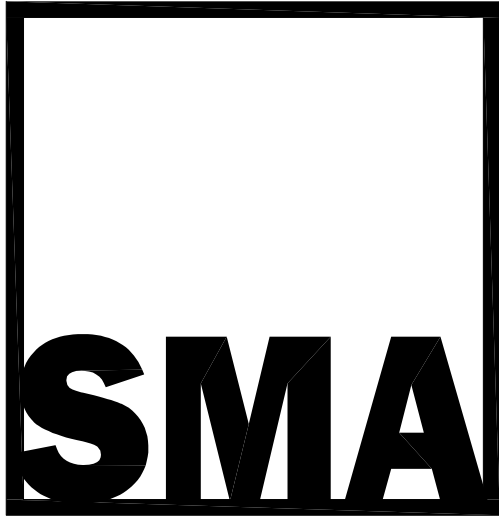
A	FOUNDATION - BY OTHER
B	ROOF TRUSSES SYSTEM - SEE FRAMING PLAN FOR SIZE.
C	FLOOR TRUSSES SYSTEM - SEE FRAMING PLAN FOR SIZE.
D	EXTERIOR FINISH - SEE ELEVATIONS.
E	ROOFING MEMBRANE OVER INSULATION OVER ROOF SYSTEM
F	ROOF SUMP & OVERFLOW ROOF SUMP - SEE ROOF PLAN DETAILS.



SCALE: 1/4" = 1'-0"

DWG. NO.





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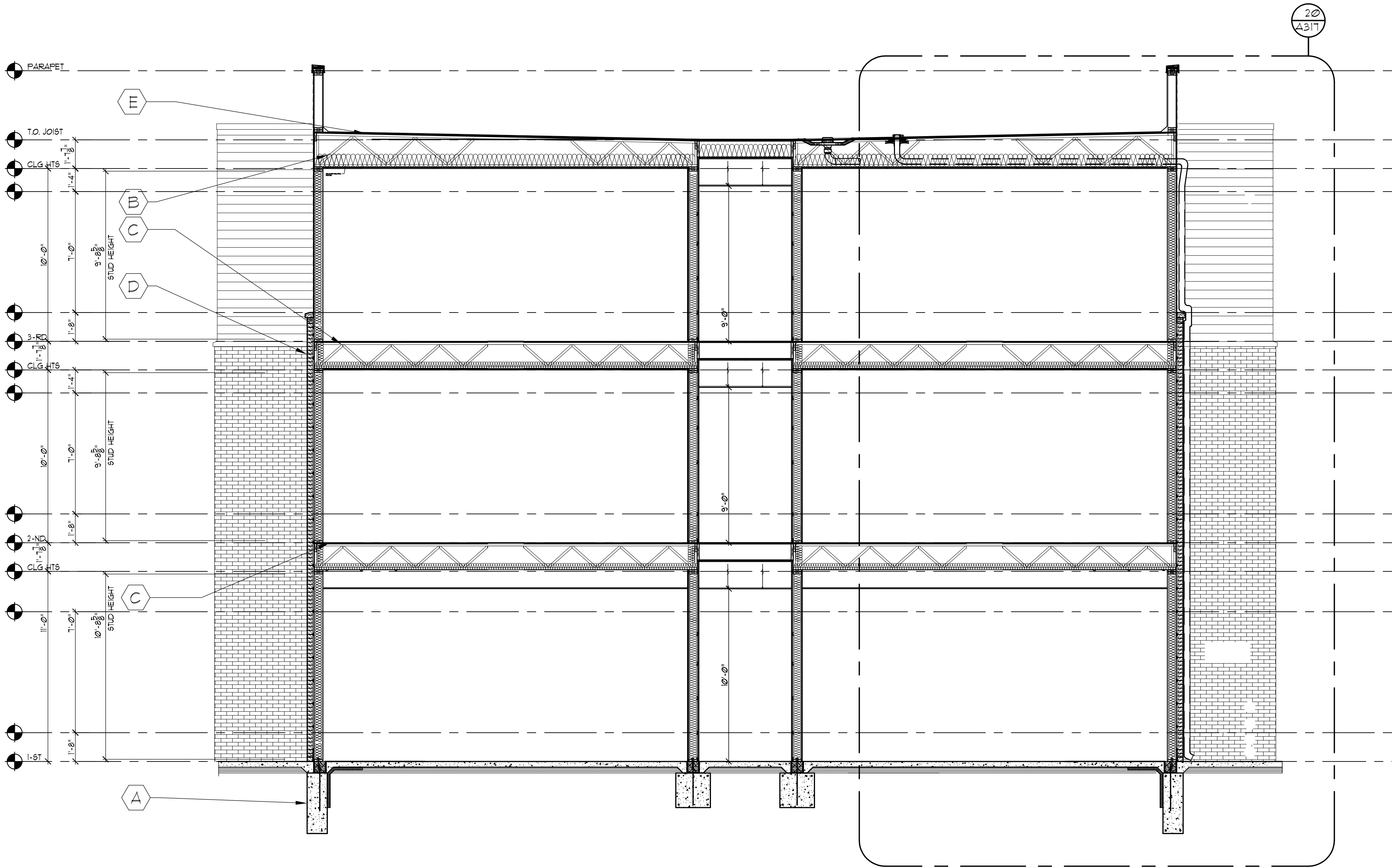
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SHEET TITLE  
BUILDING SECTIONS

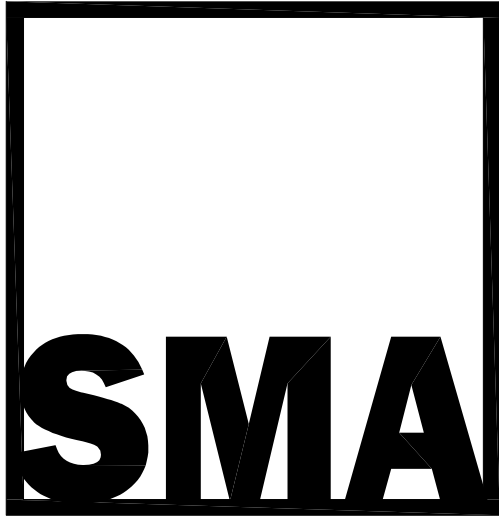
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A3.0.5  
of

SECTION KEYED NOTES:

- A FOUNDATION - BY OTHER
- B ROOF TRUSSES SYSTEM - SEE FRAMING PLAN FOR SIZE.
- C FLOOR TRUSSES SYSTEM - SEE FRAMING PLAN FOR SIZE.
- D EXTERIOR FINISH - SEE ELEVATIONS.
- E ROOFING MEMBRANE OVER INSULATION OVER ROOF SYSTEM
- F ROOF SUMP & OVERFLOW ROOF SUMP - SEE ROOF PLAN DETAILS.







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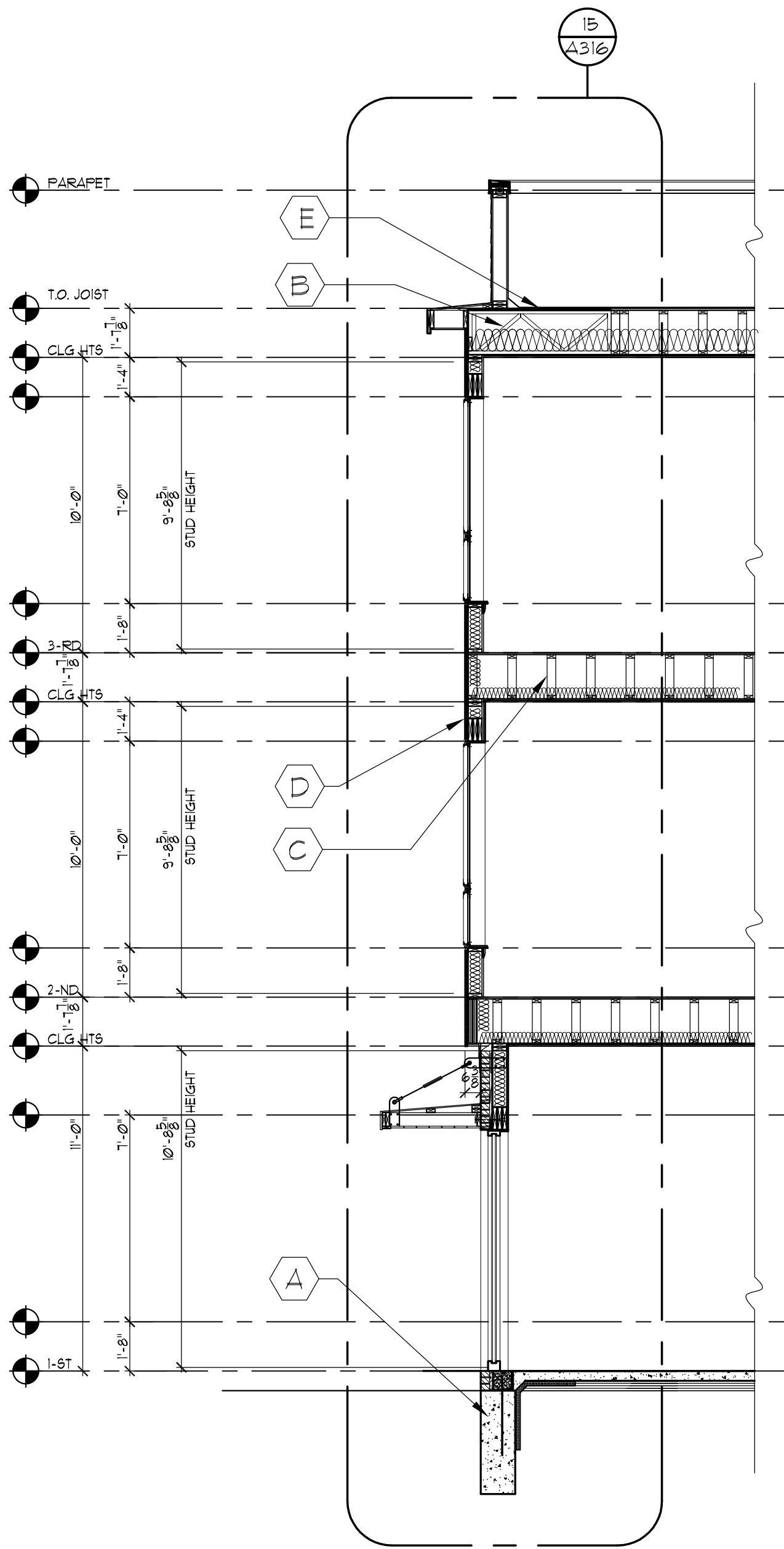
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SHEET TITLE  
BUILDING SECTIONS

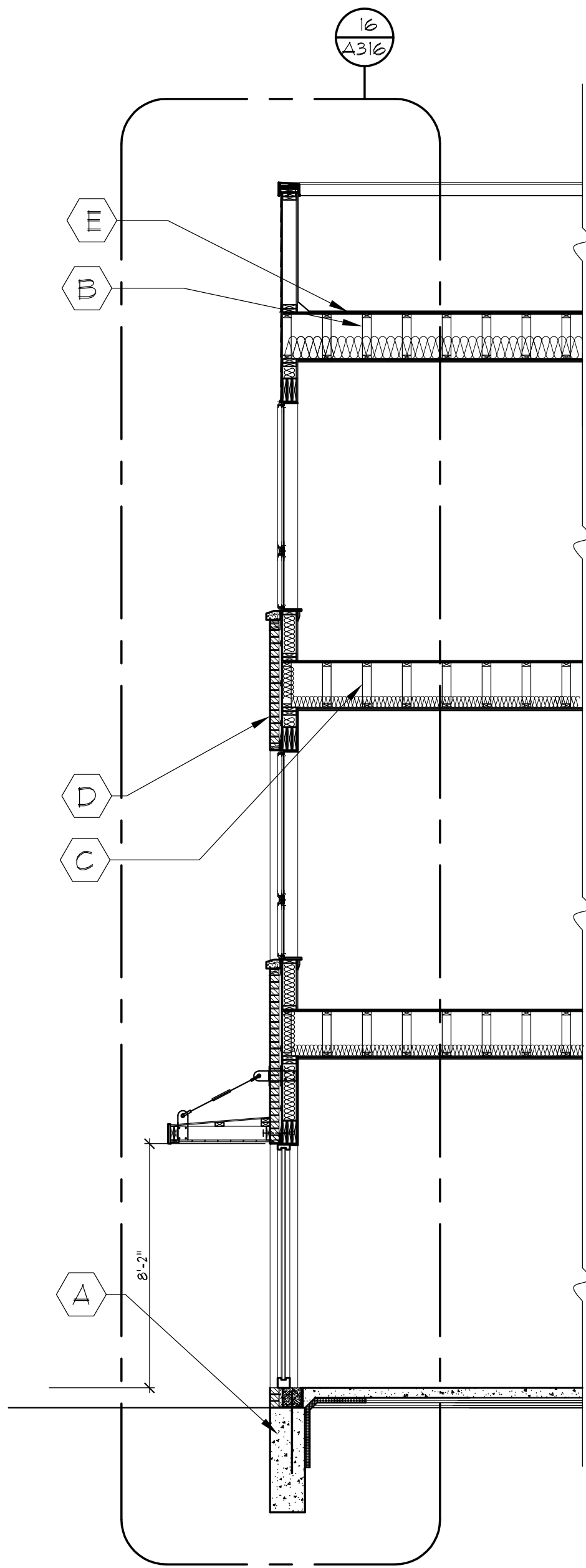
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**A3.0.6**  
of

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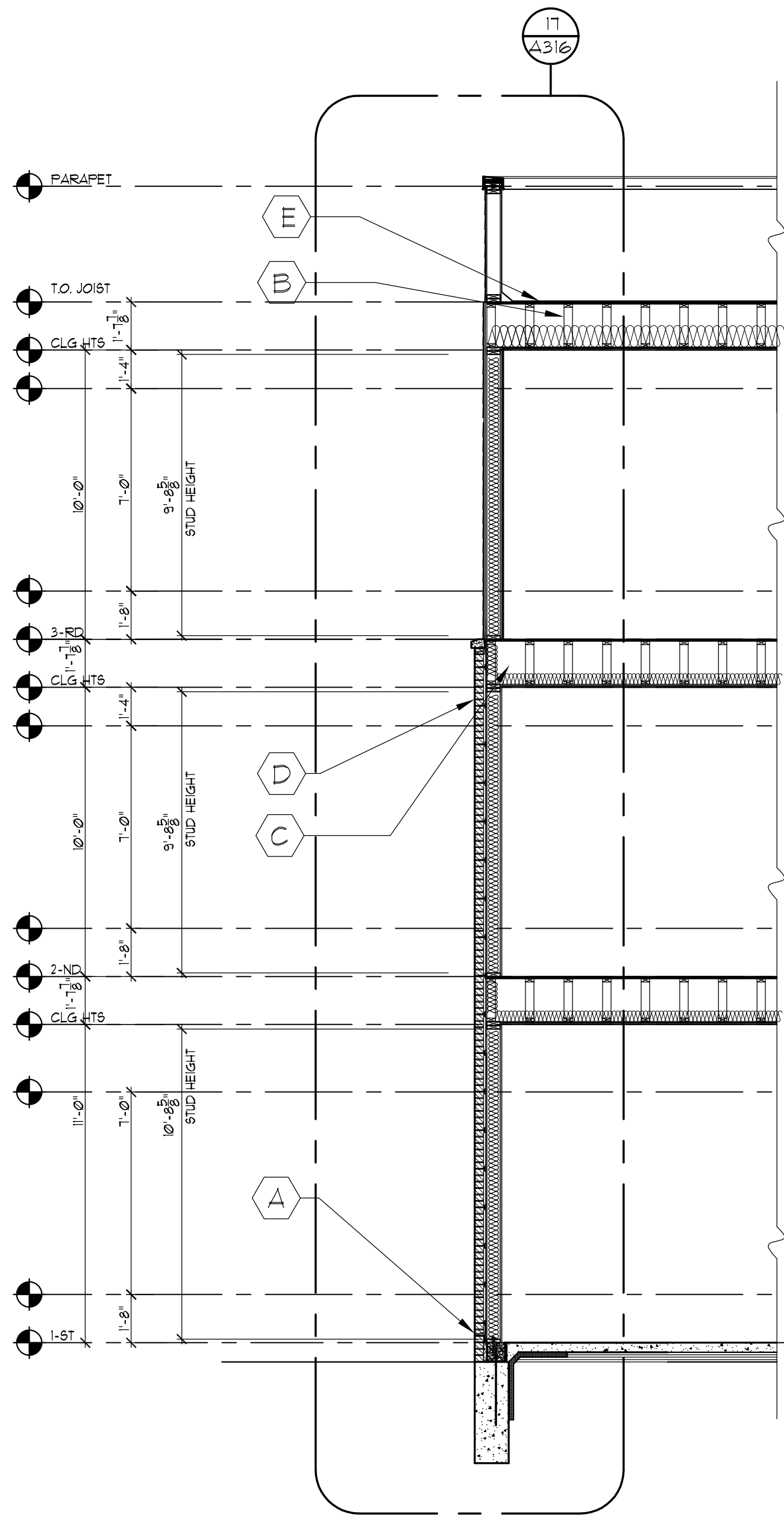
- (A) FOUNDATION - BY OTHER
- (B) ROOF TRUSSES SYSTEM - SEE FRAMING PLAN FOR SIZE.
- (C) FLOOR TRUSSES SYSTEM - SEE FRAMING PLAN FOR SIZE.
- (D) EXTERIOR FINISH - SEE ELEVATIONS.
- (E) ROOFING MEMBRANE OVER INSULATION OVER ROOF SYSTEM
- (F) ROOF SUMP & OVERFLOW ROOF SUMP - SEE ROOF PLAN DETAILS.



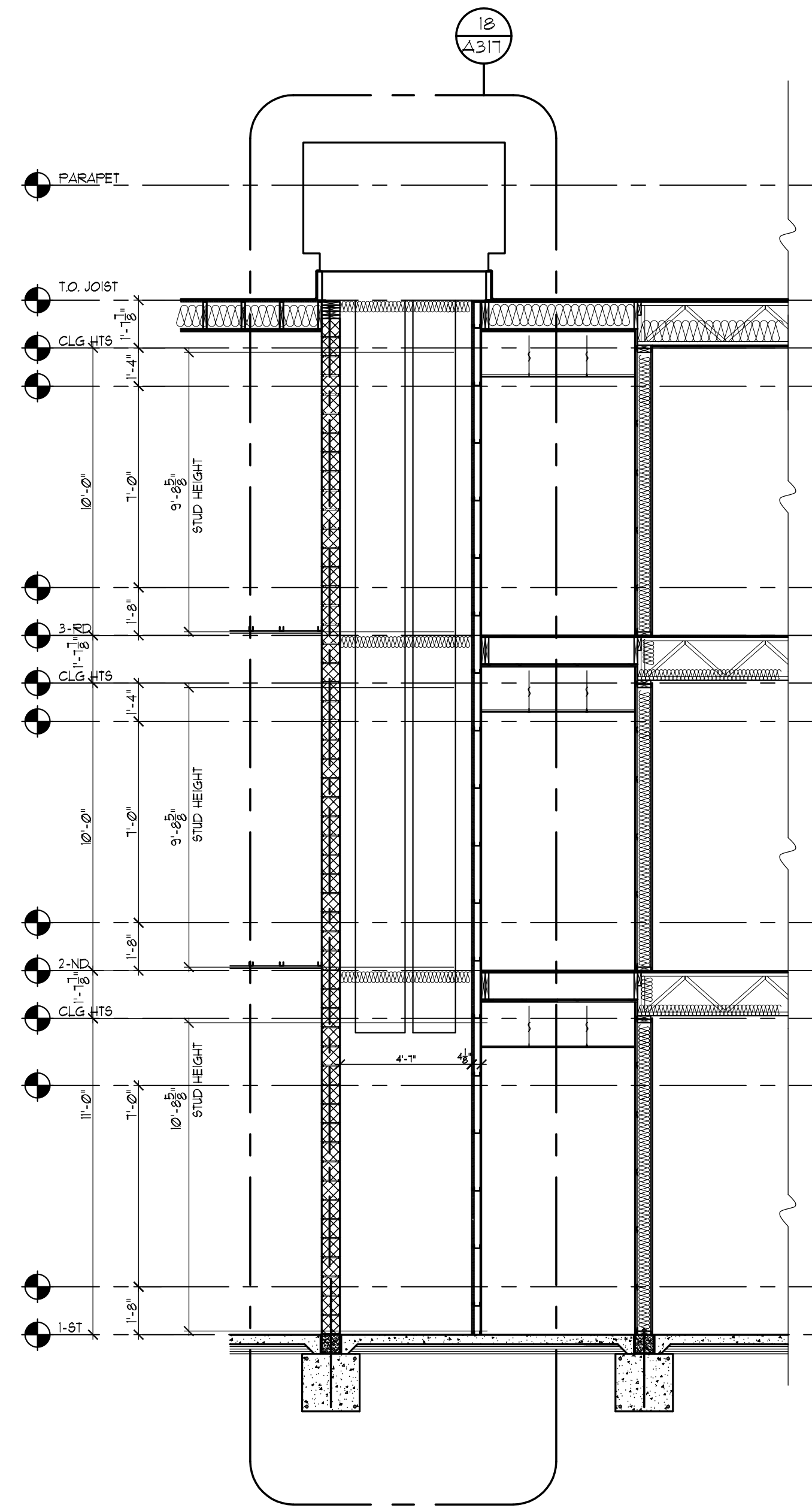
9 BUILDING SECTIONS  
SCALE: 1/4" = 1'-0"



10 BUILDING SECTIONS  
SCALE: 1/4" = 1'-0"

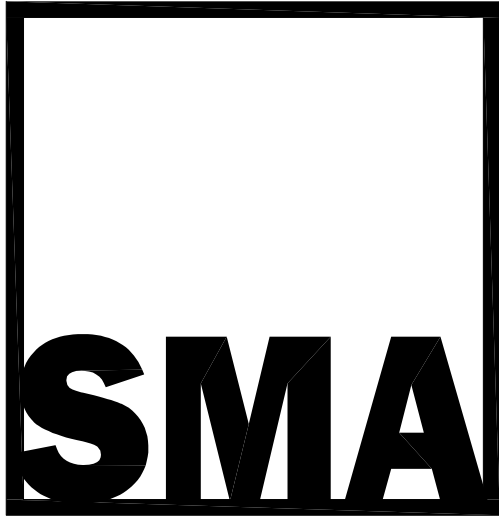


11 BUILDING SECTIONS  
SCALE: 1/4" = 1'-0"



12 BUILDING SECTIONS  
SCALE: 1/4" = 1'-0"





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D.B./C.B. R.A./P.D.

ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
WALL SECTIONS

DWG. NO.

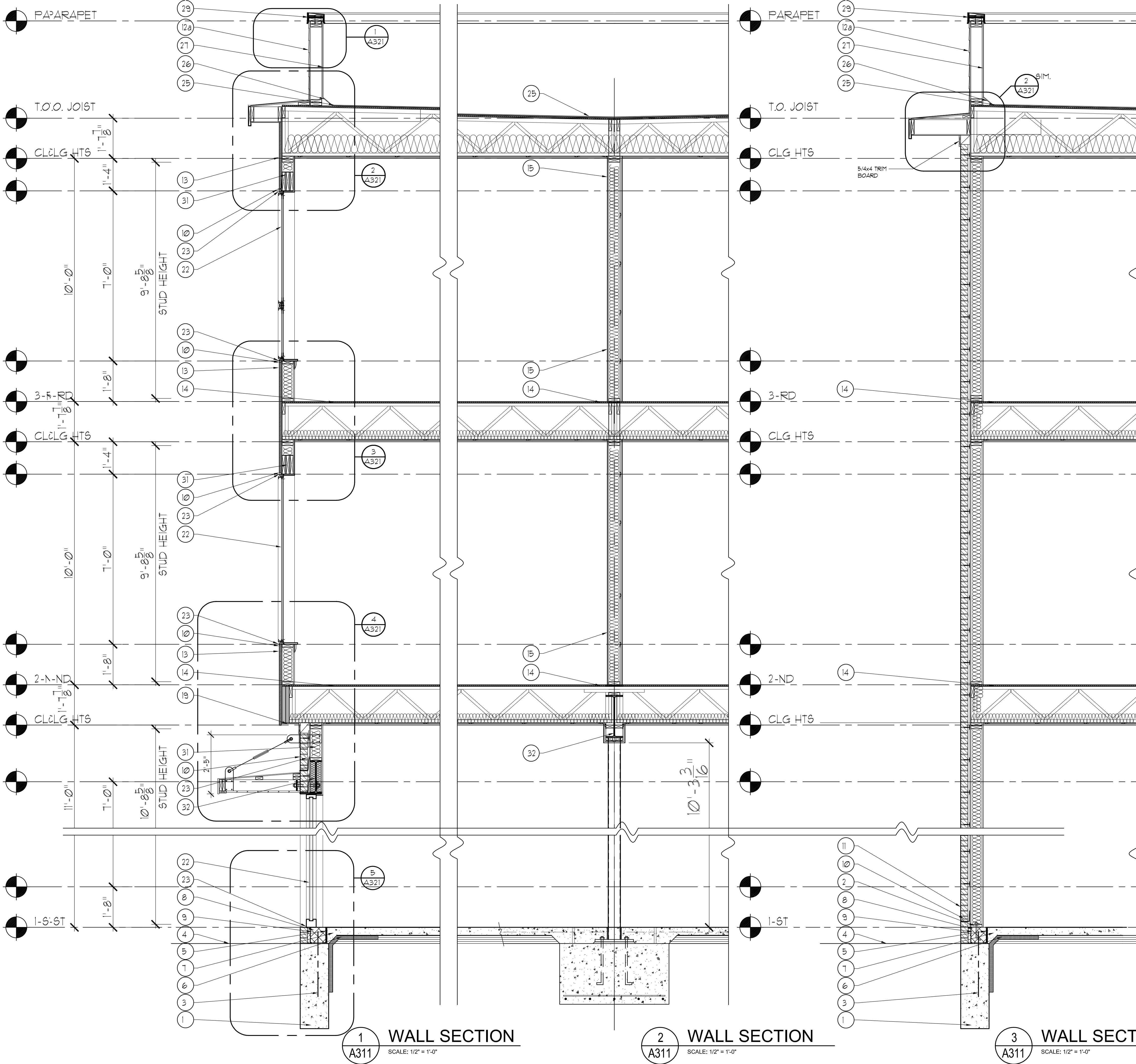
A3.1.1

of

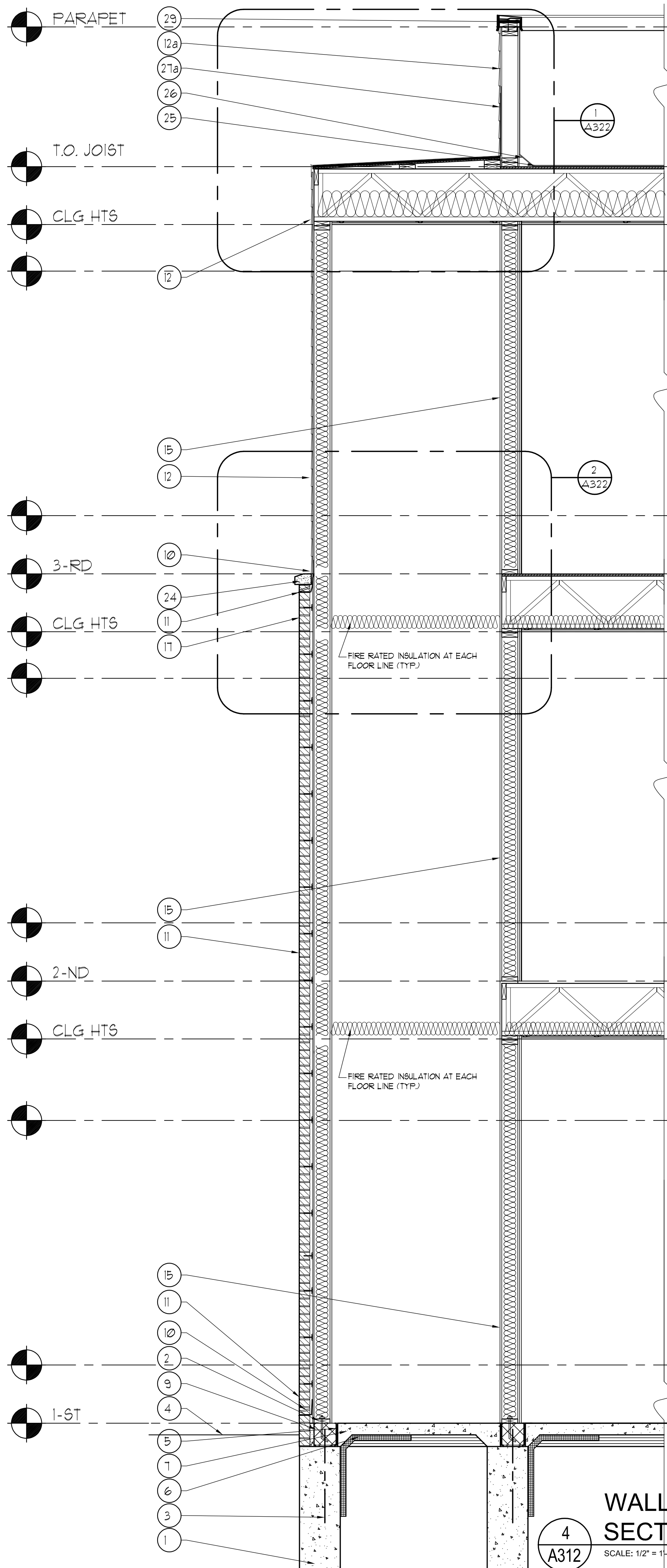
BUILDING SECTION ARCHITECTURAL KEYED NOTES:

- 1 CONC. TRENCH & COLUMN FOOTING BY OTHER
- 2 F.T. 2x6
- 3 PROVIDE #5 DOUELS PER WALL REINF. SCHEDULE
- 4 CONC. WALK PITCH 1/4" PER FOOT.
- 5 1/2" EXP. JOINT.
- 6 2"x24" RIGID INSULATION @ PERIMETER
- 7 4" CONC. SLAB  
6x6 REIN. 23x23 W/WF. OVER  
6 MIL. VAPOR BARRIER (LAP MINIMUM 6") OVER  
4" COMP. SAND.
- 8 8" OR 12" CMU W/ HORIZ. REIN. @ 16" O.C. (LADDER TYPE)
- 9 GROUT COURSES AS SHOWN.
- 10 CONTINUOUS FLASHING (WITH WEEP HOLES @ 32" O.C. IN THE BRICK AREA)
- 11 BRICK VENEER  
W/ CORRUGATED METAL WALL TIES  
@ 16" O.C. HORIZ. & VERT. TYPE W/ 1" AIR SPACE OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
- 12 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
- 13 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. OVER  
1/8" OSB
- 14 METAL PANEL OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
- 15 23/32" THICK TAG WOOD STRUCTURAL PANELS (PLYWOOD OR ADVANTECH)  
MIN. GRADE UNDERLAYMENT OVER  
FIRE-RAB. WOOD FLOOR TRUSSES (12" MIN.) @ 24" O.C. MAX  
(WITH R-19 INSULATION)  
RESILIENT CHANNELS NO. 26 MSG @ 16" O.C.  
5/8" G.W.B.  
(STC + 62, 1-HR FIRE RATED, UL NO. L528)
- 16 5/8" G.W.B. OVER  
RESILIENT CHANNELS (25 GA.) @ 24" O.C.  
2x6 WOOD STUDS @ 16" O.C.  
5/8" G.W.B.  
(STC-52, 1-HR FIRE RATED, UL NO. U311)
- 17 8" BLOCK  
W/ TRUSS TYPE REIN. @ 16" O.C.  
(2-HR FIRE RATED, UL NO. U309)
- 18 BRICK W/  
BRICK TIES @ 16" O.C. HORIZ. & VERT. TYPE
- 19 5/8" G.W.B. TYPE "X"  
ON EXTERIOR SIDE OF CHASE WALL OVER  
2-1/2" C-H STUDS @ 24" O.C.  
1" CORE BOARD ON INSIDE OF CHASE  
W/ J RUNNERS  
(1-HR FIRE RATED, UL NO. U415)
- 20 METAL SOFFIT
- 21 THRESHOLD MAX RISE 1/2"
- 22 DOOR (SEE DOOR SCHEDULE)
- 23 WINDOW (SEE ELEVATIONS FOR SIZE)
- 24 SLIDING DOOR (SEE ELEVATIONS FOR SIZE)
- 25 CONT. EXT. SEALANT
- 26 3-5/8" LIMESTONE SILL
- 27 FULLY ADHERED 60 MIL EPDM ROOFING SYSTEM (15 YEAR WARRANTY)  
ON 3/4" EXTERIOR PLYWOOD  
ON FIRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C.  
(WITH CELLULOSE SPRAY INSULATION THE DEPTH OF TRUSSES, R-50 MIN.)  
1/2" RESILIENT CHANNELS @ 16" O.C.  
5/8" G.W.B. TYPE "X"  
(1-HR FIRE RATED, UL NO. F522)
- 28 CANT.
- 29 RUN ROOFING UP AND RETURN UNDER THE COPING.
- 30 RUN ROOFING MIN 2'-0" UP
- 31 ROOF SUMP (SEE ROOF PLAN DETAIL)
- 32 OVERFLOW ROOF SUMP (SEE ROOF PLAN)
- 33 4" METAL COPING OVER 2x P.T. WOOD NAILED SECURED TO PARAPET WALL
- 34 ALUM. RAILING (WROUGHT IRON APPEARANCE) W/ STRUC. POST  
SEE STRUC. DETAIL FOR MORE INFORMATION
- 35 HEADER (SEE FRAMING PLAN)
- 36 BEAM (SEE FRAMING PLAN)
- 37 2x2 SUSPENDED CEILING GRID
- 38 MECHANICAL DUCT, REFER TO MECHANICAL PLANS FOR SIZE
- 39 5/8" G.W.B. OVER  
2x4 STUDS  
OVER 2" INSULATION AROUND MECHANICAL DUCT
- 40 3/4" PLYWOOD OVER  
2x6 @ 16" O.C. OVER  
RESILIENT CHANNELS @ 16" O.C. OVER  
5/8" DRYWALL

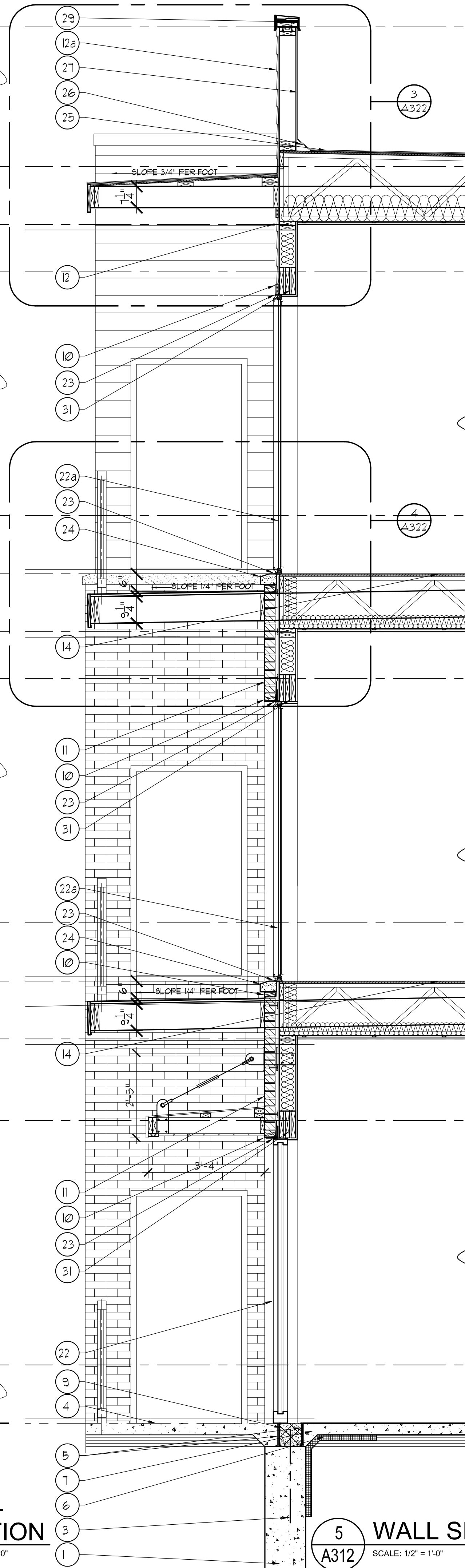
NOTE: PLEASE REFER TO STRUCTURAL  
DRAWINGS FOR SHEAR WALL INFORMATION.



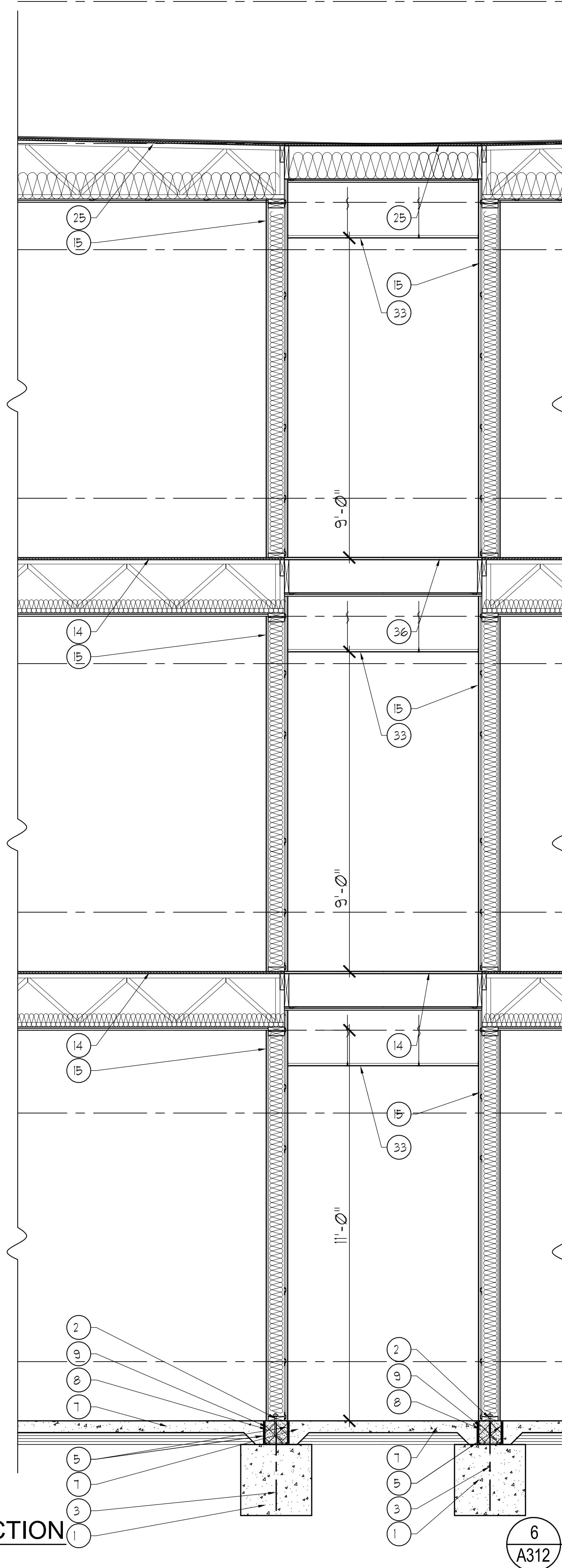




**WALL SECTION**  
4  
A312  
SCALE: 1/2" = 1'-0"



**WALL SECTION**  
5  
A312  
SCALE: 1/2" = 1'-0"



**WALL SECTION**  
6  
A312  
SCALE: 1/2" = 1'-0"

- BUILDING SECTION ARCHITECTURAL KEYED NOTES:**
- 1 CONC. TRENCH & COLUMN FOOTING BY OTHER
  - 2 F.T. 2x6
  - 3 PROVIDE #5 DOUELS PER WALL REINF. SCHEDULE
  - 4 CONC. WALK PITCH 1/4" PER FOOT.
  - 5 1/2" EXP. JOINT.
  - 6 2"x24" RIGID INSULATION @ PERIMETER
  - 7 4" CONC. SLAB  
6x6 REIN. 23x23 W/WF. OVER  
6 MIL. VAPOR BARRIER (LAP MINIMUM 6") OVER  
4" COMP. SAND.
  - 8 8" OR 12" CMU W/ HORIZ. REIN. @ 16" O.C. (LADDER TYPE)
  - 9 GROUT COURSES AS SHOWN.
  - 10 CONTINUOUS FLASHING (WITH WEEP HOLES @ 32" O.C. IN THE BRICK AREA)
  - 11 BRICK VENEER  
W/ CORRUGATED METAL WALL TIES  
@ 16" O.C. HORIZ. & VERT. TYPE W/ 1" AIR SPACE OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
  - 12 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
  - 13 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. OVER  
1/8" OSB
  - 14 23/32" THICK T&G WOOD STRUCTURAL PANELS (PLYWOOD OR ADVANTECH)  
MIN. GRADE UNDERLAYMENT OVER  
FIRE-RAB. WOOD FLOOR TRUSSES (12" MIN.) @ 24" O.C. MAX  
(WITH R-19 INSULATION)  
RESILIENT CHANNELS NO. 26 MSG @ 16" O.C.  
5/8" G.W.B.  
(STC + 62, 1-HR FIRE RATED, UL NO. L528)
  - 15 5/8" G.W.B. OVER  
RESILIENT CHANNELS (25 GA.) @ 24" O.C.  
2x6 WOOD STUDS @ 16" O.C.  
5/8" G.W.B.  
(STC-52, 1-HR FIRE RATED, UL NO. U311)
  - 16 8" BLOCK  
W/ TRUSS TYPE REIN. @ 16" O.C.  
(2-HR FIRE RATED, UL NO. U309)
  - 17 BRICK W/  
BRICK TIES @ 16" O.C. HORIZ. & VERT. TYPE
  - 18 5/8" G.W.B. TYPE "X"  
ON EXTERIOR SIDE OF CHASE WALL OVER  
2-1/2" C-H STUDS @ 24" O.C.  
1" CORE BOARD ON INSIDE OF CHASE  
W/ J RUNNERS  
(1-HR FIRE RATED, UL NO. U415)
  - 19 METAL SOFFIT
  - 20 THRESHOLD MAX RISE 1/2"
  - 21 DOOR (SEE DOOR SCHEDULE)
  - 22 WINDOW (SEE ELEVATIONS FOR SIZE)
  - 22a SLIDING DOOR (SEE ELEVATIONS FOR SIZE)
  - 23 CONT. EXT. SEALANT
  - 24 3-5/8" LIMESTONE SILL
  - 25 FULLY ADHERED 60 MIL EPDM ROOFING SYSTEM (15 YEAR WARRANTY)  
ON 3/4" EXTERIOR PLYWOOD  
ON FIRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C.  
(WITH CELLULOSE SPRAY INSULATION THE DEPTH OF TRUSSES, R-50 MIN.)  
1/2" RESILIENT CHANNELS @ 16" O.C.  
5/8" G.W.B. TYPE "X"  
(1-HR FIRE RATED, UL NO. F522)
  - 26 CANT.
  - 27 RUN ROOFING UP AND RETURN UNDER THE COPING.
  - 27a RUN ROOFING MIN 2'-0" UP
  - 28 ROOF SUMP (SEE ROOF PLAN DETAIL)
  - 28a OVERFLOW ROOF SUMP (SEE ROOF PLAN)
  - 29 4" METAL COPING OVER 2x P.T. WOOD NAILED SECURED TO PARAPET WALL
  - 30 ALUM. RAILING (WROUGHT IRON APPEARANCE) W/ STRUC. POST  
SEE STRUC. DETAIL FOR MORE INFORMATION
  - 31 HEADER (SEE FRAMING PLAN)
  - 32 BEAM (SEE FRAMING PLAN)
  - 33 2x2 SUSPENDED CEILING GRID
  - 34 MECHANICAL DUCT, REFER TO MECHANICAL PLANS FOR SIZE
  - 35 5/8" G.W.B. OVER  
2x4 STUDS  
OVER 2" INSULATION AROUND MECHANICAL DUCT
  - 36 3/4" PLYWOOD OVER  
2x6 @ 16" O.C. OVER  
RESILIENT CHANNELS @ 16" O.C. OVER  
5/8" DRYWALL

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PROJECT NAME:  
**TROY CROSSING  
APARTMENTS  
BUILDING # 5**

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN  
THE FIELD BY THE CONTRACTOR. THE  
CONTRACTOR IS SOLELY RESPONSIBLE  
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JOB NO. 15-0353

D.B./C.B. R.A./P.D

ISSUANCES

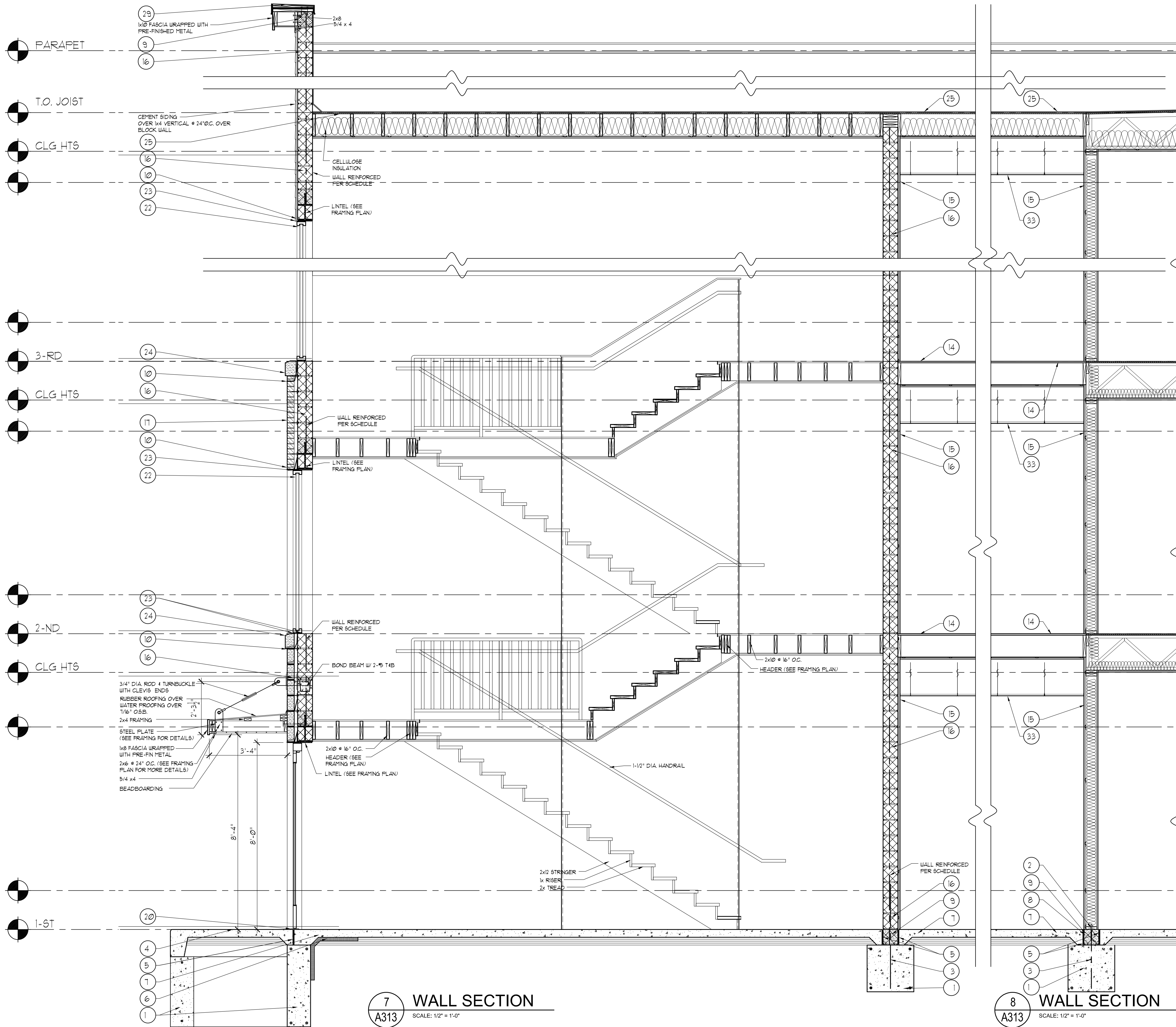
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SHEET TITLE  
**WALL SECTIONS**

DWG. NO.  
**A3.1.2**  
of

NOTE: PLEASE REFER TO STRUCTURAL  
DRAWINGS FOR SHEAR WALL INFORMATION.





BUILDING SECTION ARCHITECTURAL KEYED NOTES:

- 1 CONG. TRENCH & COLUMN FOOTING BY OTHER
- 2 P.T. 2x6
- 3 PROVIDE #5 DOUELS PER WALL REINF. SCHEDULE
- 4 CONG. WALK PITCH 1/4" PER FOOT.
- 5 1/2" EXP. JOINT.
- 6 2"x24" RIGID INSULATION @ PERIMETER
- 7 4" CONG. SLAB  
6x6 REINF. 2'x2'3 W/UF. OVER  
6 MIL. VAPOR BARRIER (LAP MINIMUM 6") OVER  
4" COMP. SAND.
- 8 8" OR 12" CMU W/ HORIZ. REINF. @ 16" O.C. (LADDER TYPE)
- 9 GROUT COURSES AS SHOWN.
- 10 CONTINUOUS FLASHING (WITH WEEP HOLES @ 32" O.C. IN THE BRICK AREA)
- 11 BRICK VENEER  
W/ CORRUGATED METAL WALL TIES  
@ 16" O.C. HORIZ. 4 VERT. TYPE W/ 1" AIR SPACE OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G/UB.  
(1-HR FIRE RATED, UL NO. U356)
- 12 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G/UB.  
(1-HR FIRE RATED, UL NO. U356)
- 13 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/16" OSB OVER  
2x6 STUDS @ 16" O.C. OVER  
1/16" OSB
- 14 METAL PANEL OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G/UB.  
(1-HR FIRE RATED, UL NO. U356)
- 15 23/32" THICK TAG WOOD STRUCTURAL PANELS (PLYWOOD OR ADVANTECH),  
MIN GRADE UNDERLAYMENT OVER  
PRE-FAB. WOOD FLOOR TRUSSES (12" D. MIN.) @ 24" O.C. MAX.  
(WITH R-13 INSULATION)  
RESILIENT CHANNELS NO. 26 MSG @ 16" O.C.  
5/8" G/UB.  
(STC + 62, 1-HR FIRE RATED, UL NO. L528)
- 16 5/8" G/UB. OVER  
RESILIENT CHANNELS (25 GA.) @ 24" O.C.  
2x6 WOOD STUDS @ 16" O.C.  
5/8" G/UB.  
(STC-52, 1-HR FIRE RATED, UL NO. U311)
- 17 8" BLOCK  
W/ TRUSS TYPE REINF. @ 16" O.C.  
(2-HR FIRE RATED, UL NO. U305)
- 18 BRICK W/  
BRICK TIES @ 16" O.C. HORIZ. 4 VERT. TYPE
- 19 5/8" G/UB. TYPE "X"  
ON EXTERIOR SIDE OF CHASE WALL OVER  
2-1/2" C-H STUDS @ 24" O.C.  
1" CORE BOARD ON INSIDE OF CHASE  
W/ J RUNNERS  
(1-HR FIRE RATED, UL NO. U415)
- 20 METAL SOFFIT
- 21 THRESHOLD MAX RISE 1/2"
- 22 DOOR (SEE DOOR SCHEDULE)
- 23 WINDOW (SEE ELEVATIONS FOR SIZE)
- 24 SLIDING DOOR (SEE ELEVATIONS FOR SIZE)
- 25 CONT. EXT. SEALANT
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- 27 FULLY ADHERED 60 MIL EPDM ROOFING SYSTEM (15 YEAR WARRANTY)  
ON 3/4" EXTERIOR PLYWOOD  
ON PRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C.  
(WITH CELLULOSE SPRAY INSULATION THE DEPTH OF TRUSSES, R-58 MIN.)  
1/2" RESILIENT CHANNELS @ 16" O.C.  
5/8" G/UB. TYPE "X"  
(1-HR FIRE RATED, UL NO. F522)
- 28 CANT.
- 29 RUN ROOFING UP AND RETURN UNDER THE COPING.
- 30 RUN ROOFING MIN 2'-0" UP
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- 32 OVERFLOW ROOF SUMP (SEE ROOF PLAN)
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- 38 MECHANICAL DUCT. REFER TO MECHANICAL PLANS FOR SIZE
- 39 5/8" G/UB. OVER  
2x4 STUDS  
OVER 2" INSULATION AROUND MECHANICAL DUCT
- 40 3/4" PLYWOOD OVER  
2x6 @ 16" O.C. OVER  
RESILIENT CHANNELS @ 16" O.C. OVER  
2/8" DIST. WALL

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PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING # 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN  
THE FIELD BY THE CONTRACTOR. THE  
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JOB NO. 15-0353

D.B./C.B. R.A./P.D.

ISSUANCES

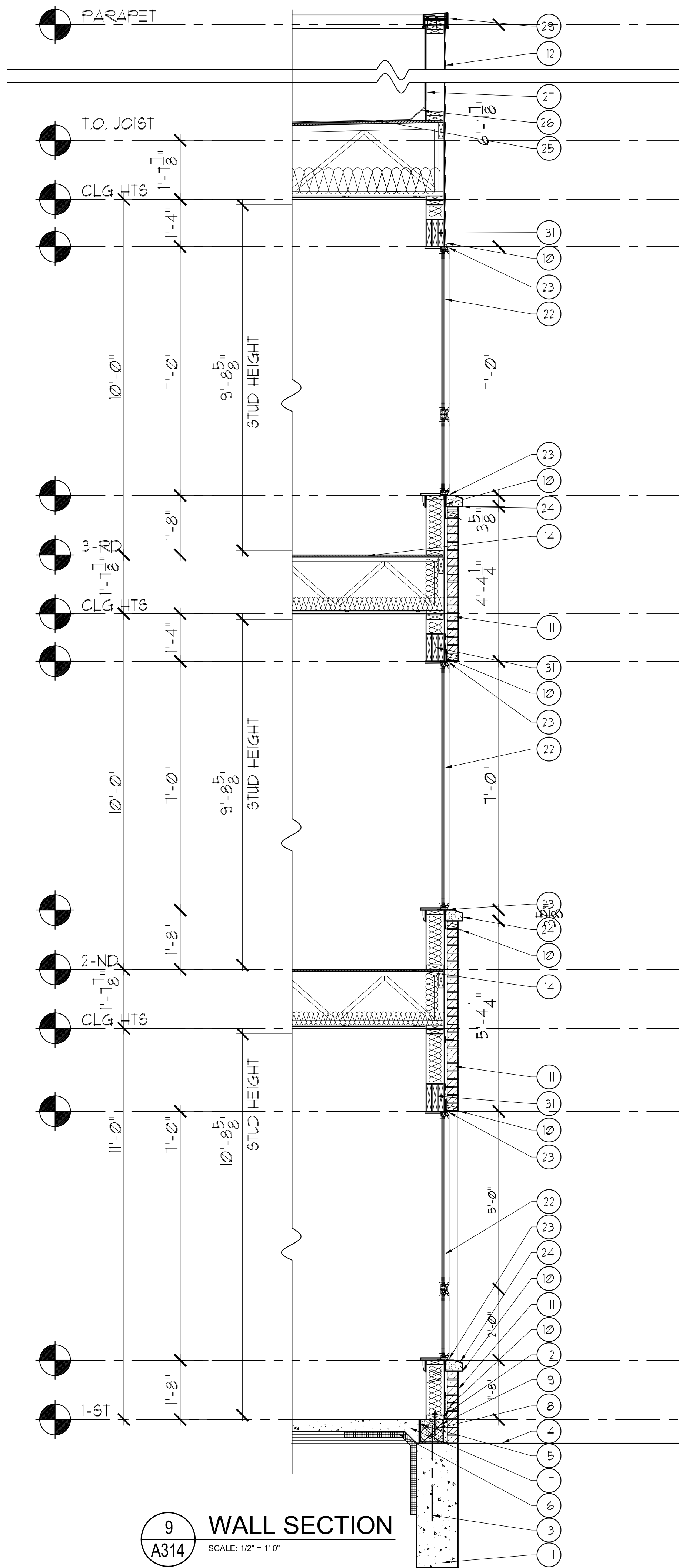
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SHEET TITLE  
WALL SECTIONS

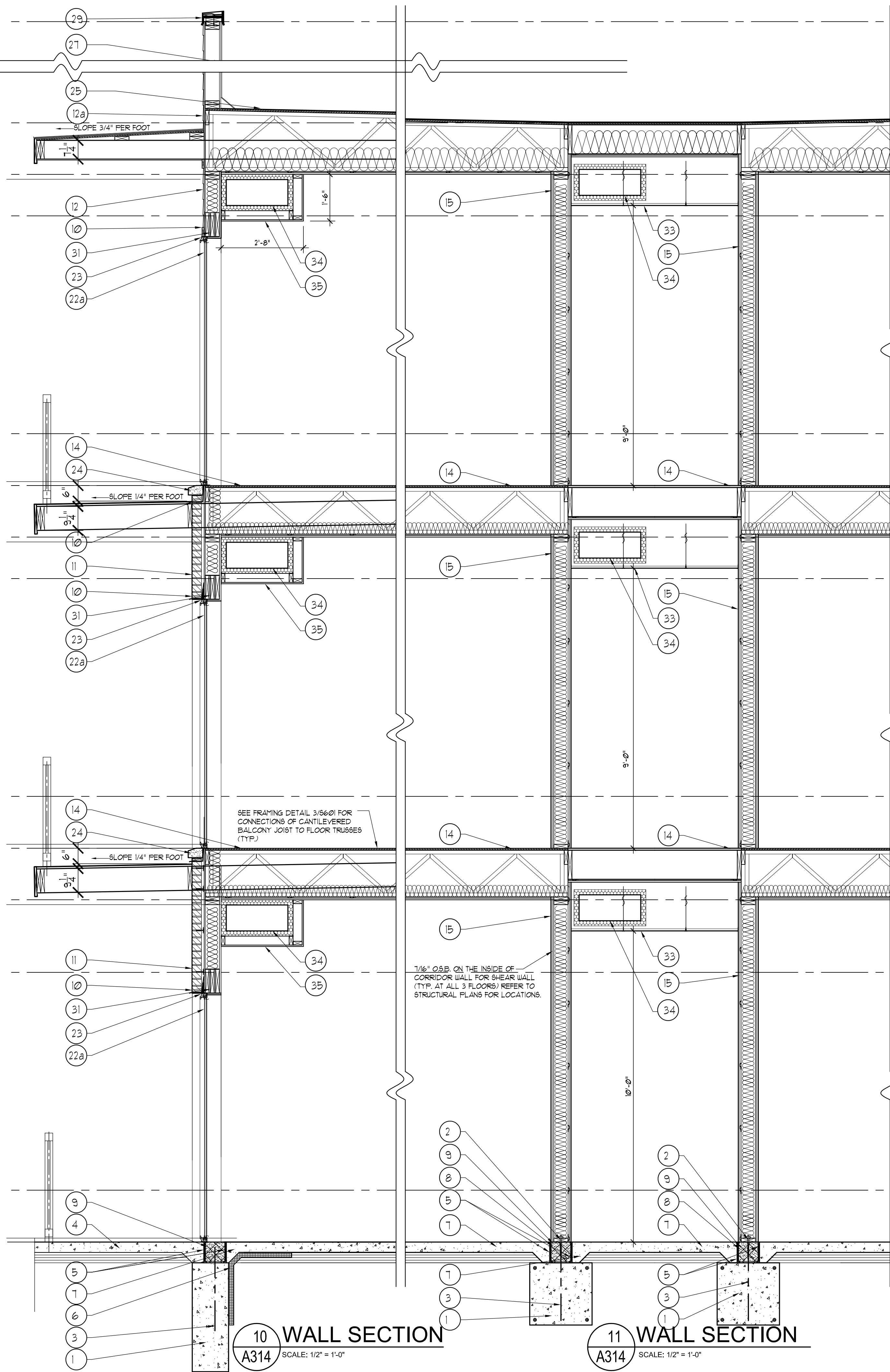
DWG. NO.  
**A3.1.3**  
of

NOTE: PLEASE REFER TO STRUCTURAL  
DRAWINGS FOR SHEAR WALL INFORMATION.

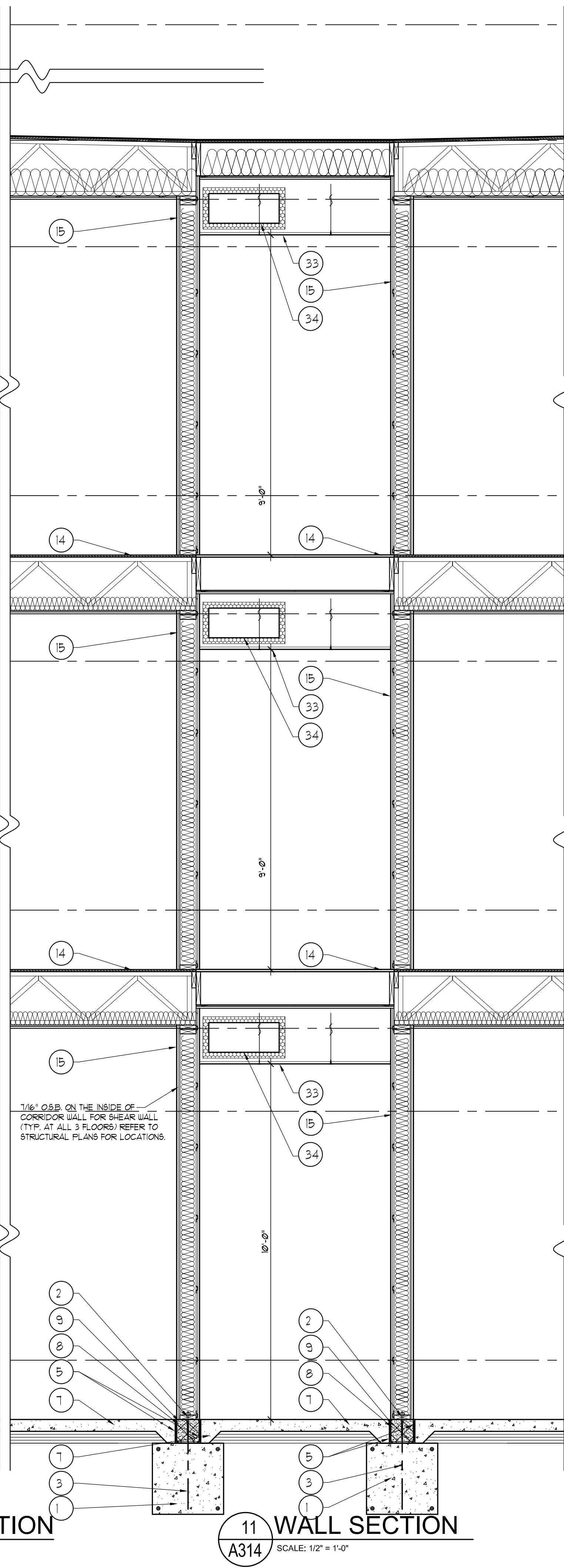




9 WALL SECTION  
A314 SCALE: 1/2" = 1'-0"



10 WALL SECTION  
A314 SCALE: 1/2" = 1'-0"



11 WALL SECTION  
A314 SCALE: 1/2" = 1'-0"

BUILDING SECTION ARCHITECTURAL KEYED NOTES:

- 1 CONC. TRENCH & COLUMN FOOTING BY OTHER
- 2 P.T. 2x6
- 3 PROVIDE #5 DOUELS PER WALL REINF. SCHEDULE
- 4 CONC. WALK PITCH 1/4" PER FOOT.
- 5 1/2" EXP. JOINT.
- 6 2"x24" RIGID INSULATION @ PERIMETER
- 7 4" CONC. SLAB  
6x6 REINF. 2x2x3 W/W.F. OVER  
6 MIL. VAPOR BARRIER (LAP MINIMUM 6") OVER  
4" COMP. SAND.
- 8 8" OR 12" CMU W/ HORIZ. REINF. @ 16" O.C. (LADDER TYPE)
- 9 GROUT COURSES AS SHOWN.
- 10 CONTINUOUS FLASHING (WITH WEEP HOLES @ 32" O.C. IN THE BRICK AREA)
- 11 BRICK VENEER  
W/ CORRUGATED METAL WALL TIES  
@ 16" O.C. HORIZ. & VERT. TYPE W/ 1" AIR SPACE OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
- 12 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
- 13 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/16" OSB OVER  
2x6 STUDS @ 16" O.C. OVER  
1/16" OSB
- 14 METAL PANEL OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
- 15 23/32" THICK 1x6 WOOD STRUCTURAL PANELS (PLYWOOD OR ADVANTECH),  
MIN. GRADE UNDERLAYMENT OVER  
FIRE-RAB. WOOD FLOOR TRUSSES (12" D. MIN.) @ 24" O.C. MAX  
(WITH R-19 INSULATION)  
RESILIENT CHANNELS NO. 26 MSG @ 16" O.C.  
5/8" G.W.B.  
(5TC + 62, 1-HR FIRE RATED, UL NO. L528)
- 16 5/8" G.W.B. OVER  
RESILIENT CHANNELS (25 GA.) @ 24" O.C.  
2x6 WOOD STUDS @ 16" O.C.  
5/8" G.W.B.  
(5TC-52, 1-HR FIRE RATED, UL NO. U311)
- 17 8" BLOCK  
W/ TRUSS TYPE REINF. @ 16" O.C.  
(2-HR FIRE RATED, UL NO. U205)
- 18 BRICK W/  
BRICK TIES @ 16" O.C. HORIZ. & VERT. TYPE
- 19 5/8" G.W.B. TYPE "X"  
ON EXTERIOR SIDE OF CHASE WALL OVER  
2-1/2" C-H STUDS @ 24" O.C.  
1" CORE BOARD ON INSIDE OF CHASE  
W/ J RUNNERS  
(1-HR FIRE RATED, UL NO. U415)
- 20 METAL SOFFIT
- 21 THRESHOLD MAX RISE 1/2"
- 22 DOOR (SEE DOOR SCHEDULE)
- 23 WINDOW (SEE ELEVATIONS FOR SIZE)
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- 25 CONT. EXT. SEALANT
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ON 3/4" EXTERIOR PLYWOOD  
ON PRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C.  
(WITH CELLULOSE SPRAY INSULATION THE DEPTH OF TRUSSES, R-50 MIN.)  
1/2" RESILIENT CHANNELS @ 16" O.C.  
5/8" G.W.B. TYPE "X"  
(1-HR FIRE RATED, UL NO. F522)
- 28 CANT.
- 29 RUN ROOFING UP AND RETURN UNDER THE COPING.
- 30 RUN ROOFING MIN 2'-0" UP
- 31 ROOF SUMP (SEE ROOF PLAN DETAIL)
- 32 OVERFLOW ROOF SUMP (SEE ROOF PLAN)
- 33 4" METAL COPING OVER 2x P.T. WOOD NAILED SECURED TO PARAPET WALL
- 34 ALUM. RAILING (WROUGHT IRON APPEARANCE) W/ STRUC. POST  
SEE STRUC. DETAIL FOR MORE INFORMATION
- 35 HEADER (SEE FRAMING PLAN)
- 36 BEAM (SEE FRAMING PLAN)
- 37 2x2' SUSPENDED CEILING GRID
- 38 MECHANICAL DUCT, REFER TO MECHANICAL PLANS FOR SIZE
- 39 5/8" G.W.B. OVER  
2x4 STUDS  
OVER 2" INSULATION AROUND MECHANICAL DUCT
- 40 3/4" PLYWOOD OVER  
2x6 @ 16" O.C. OVER  
RESILIENT CHANNELS @ 16" O.C. OVER  
5/8" DRYWALL

NOTE: PLEASE REFER TO STRUCTURAL  
DRAWINGS FOR SHEAR WALL INFORMATION.

**SMA**  
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PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING # 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

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JOB NO. 15-0353

D.B./C.B. R.A./P.D

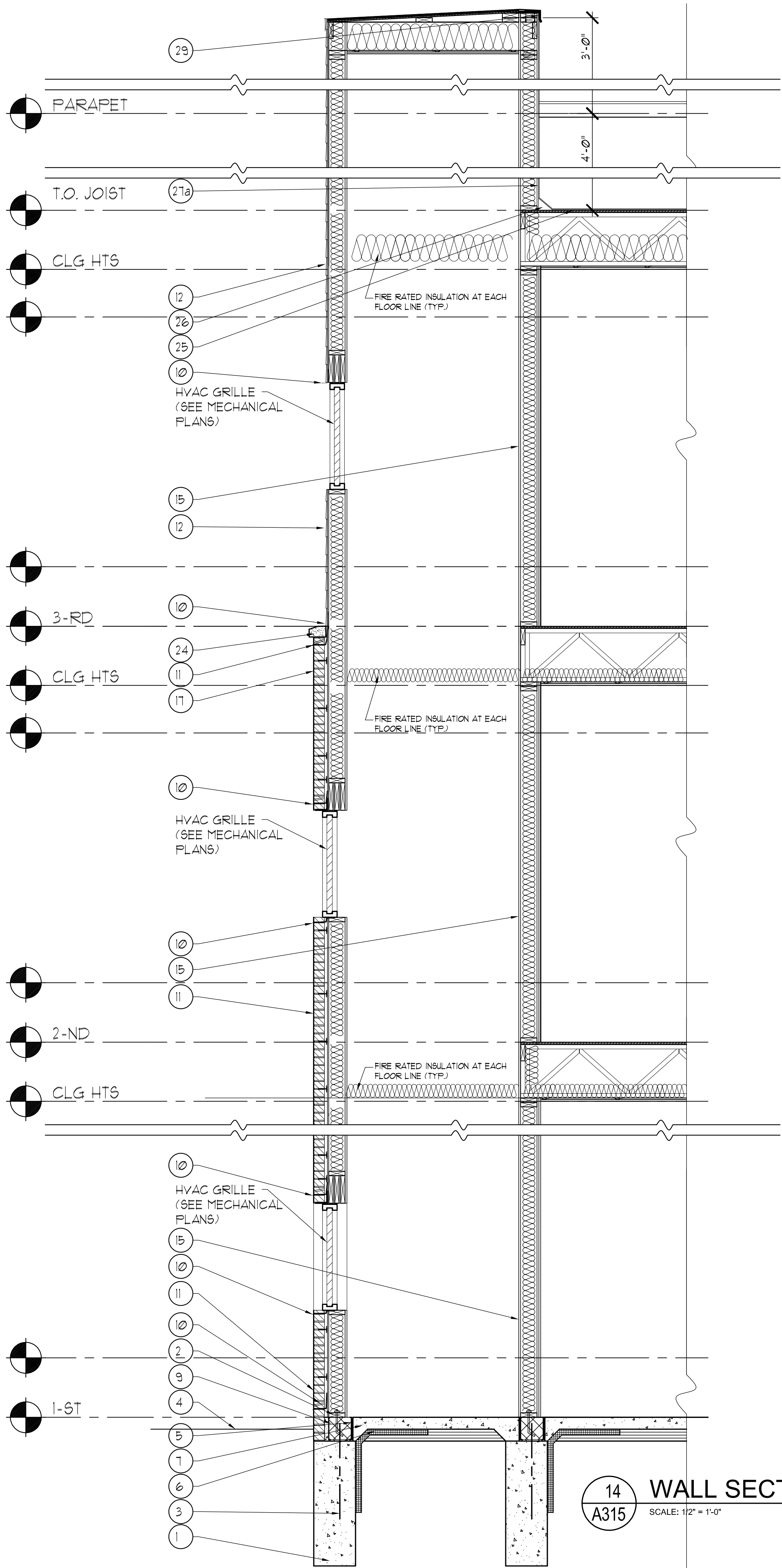
ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
WALL SECTIONS

DWG. NO.  
**A3.1.4**  
of





BUILDING SECTION ARCHITECTURAL KEYED NOTES:

- 1 CONG. TRENCH & COLUMN FOOTING BY OTHER
- 2 P.T. 2x6
- 3 PROVIDE 5% DOUELS PER WALL REINF. SCHEDULE
- 4 CONG. WALK PITCH 1/4" PER FOOT.
- 5 1/2" EXP. JOINT.
- 6 2"x24" RIGID INSULATION @ PERIMETER
- 7 4" CONG. SLAB  
6x6 REINF. 13x23 WJIF. OVER  
6 MIL. VAPOR BARRIER (LAP MINIMUM 6") OVER  
4" COMP. SAND.
- 8 8" OR 12" CMU W/ HORIZ. REINF. @ 16" O.C. (LADDER TYPE)
- 9 GROUT COURSES AS SHOWN.
- 10 CONTINUOUS FLASHING. (WITH WEEP HOLES @ 32" O.C. IN THE BRICK AREA)
- 11 BRICK VENEER  
W/ CORRUGATED METAL WALL TIES  
@ 16" O.C. HORIZ. & VERT. TYPE W/ 1" AIR SPACE OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO.: U356)
- 12 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
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MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
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- 14 23/32" THICK T&G WOOD STRUCTURAL PANELS (PLYWOOD OR ADVANTECH),  
MIN. GRADE UNDERLAYMENT OVER  
PRE-FAB. WOOD FLOOR TRUSSES (12"D, MIN.) @ 24" O.C. MAX.  
(WITH R-19 INSULATION)  
RESILIENT CHANNELS NO. 26 MSG @ 16" O.C.  
5/8" G.W.B.  
(STC = 62, 1-HR FIRE RATED, UL NO.: L528)
- 15 5/8" G.W.B. OVER  
RESILIENT CHANNELS (25 GA.) @ 24" O.C.  
2x6 WOOD STUDS @ 16" O.C.  
5/8" G.W.B.  
(STC=52, 1-HR FIRE RATED, UL NO.: U311)
- 16 8" BLOCK  
W/ TRUSS TYPE REINF. @ 16" O.C.  
(2-HR FIRE RATED, UL NO.: U305)
- 17 BRICK W/  
BRICK TIES @ 16" O.C. HORIZ. & VERT. TYPE
- 18 5/8" G.W.B. TYPE "X"  
ON EXTERIOR SIDE OF CHASE WALL OVER  
2-1/2" C-H STUDS @ 24" O.C.  
1" CORE BOARD ON INSIDE OF CHASE  
W/ J RUNNERS  
(1-HR FIRE RATED, UL NO.: U415)
- 19 METAL SOFFIT
- 20 THRESHOLD MAX RISE 1/2"
- 21 DOOR (SEE DOOR SCHEDULE)
- 22 WINDOW (SEE ELEVATIONS FOR SIZE)
- 22a SLIDING DOOR (SEE ELEVATIONS FOR SIZE)
- 23 CONT. EXT. SEALANT
- 24 3-5/8" LIMESTONE SILL
- 25 FULLY ADHERED 60 MIL. EPDM ROOFING SYSTEM (5 YEAR WARRANTY)  
ON 3/4" EXTERIOR PLYWOOD  
ON PRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C.  
(WITH CELLULOSE SPRAY INSULATION THE DEPTH OF TRUSSES, R-50 MIN.)  
1/2" RESILIENT CHANNELS @ 16" O.C.  
5/8" G.W.B. TYPE "X"  
(1-HR FIRE RATED, UL NO.: F522)
- 26 G.A.T.
- 27 RUN ROOFING UP AND RETURN UNDER THE COPING.
- 27a RUN ROOFING MIN 2'-0" UP
- 28 ROOF SUMP (SEE ROOF PLAN DETAIL)
- 28a OVERFLOW ROOF SUMP (SEE ROOF PLAN)
- 29 4" METAL COPING OVER 2x P.T. WOOD NAILED SECURED TO PARAPET WALL
- 30 ALUM. RAILING (WROUGHT IRON APPEARANCE) W/ STRUC. POST  
SEE STRUC. DETAIL FOR MORE INFORMATION
- 31 HEADER (SEE FRAMING PLAN)
- 32 BEAM (SEE FRAMING PLAN)
- 33 2x2 SUSPENDED CEILING GRID
- 34 MECHANICAL DUCT, REFER TO MECHANICAL PLANS FOR SIZE
- 35 5/8" G.W.B. OVER  
2x4 STUDS  
OVER 2" INSULATION AROUND MECHANICAL DUCT
- 36 3/4" PLYWOOD OVER  
2x6 @ 16" O.C. OVER  
RESILIENT CHANNELS @ 16" O.C. OVER  
5/8" DRYWALL

NOTE: PLEASE REFER TO STRUCTURAL  
DRAWINGS FOR SHEAR WALL INFORMATION.

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PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN  
THE FIELD BY THE CONTRACTOR. THE  
CONTRACTOR IS SOLELY RESPONSIBLE  
FOR COORDINATION OF ALL DIMENSIONS.

JOB NO. 15-0353

D.B./C.B. R.A./P.D

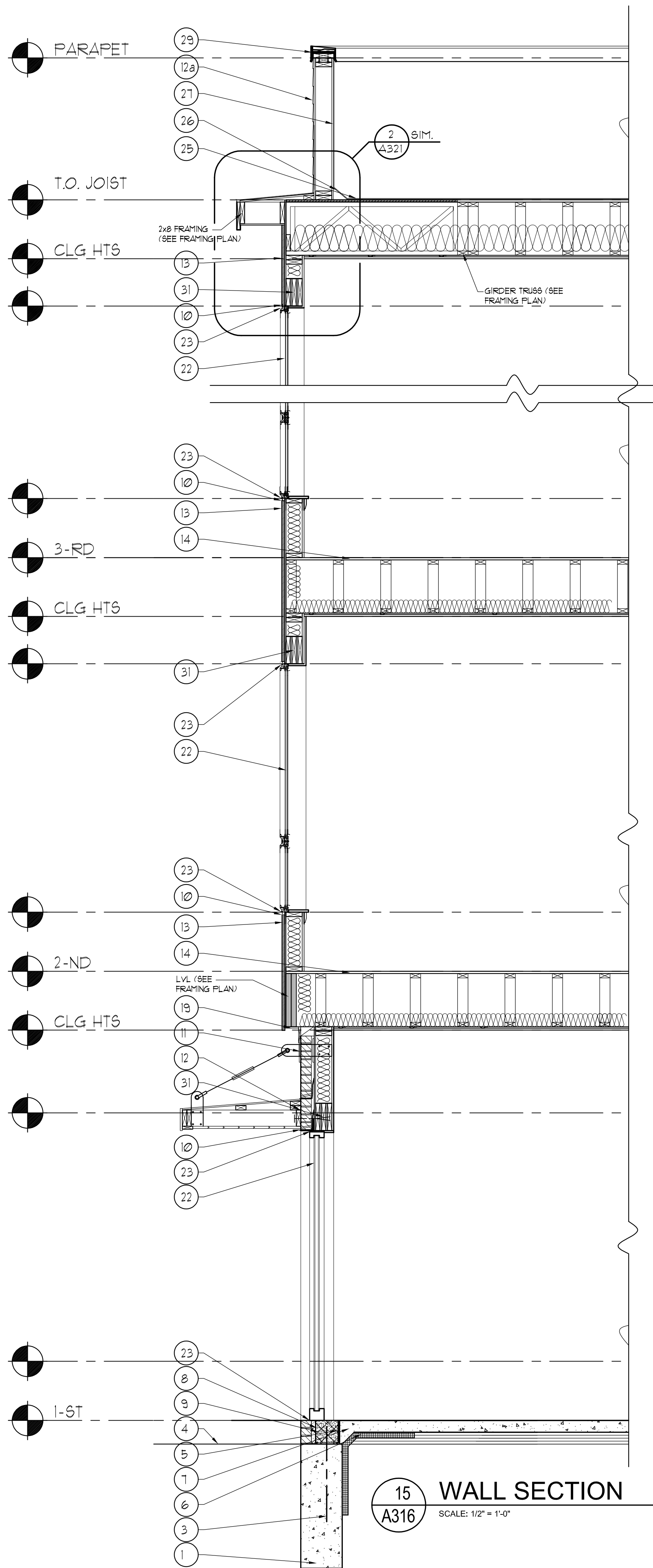
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NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

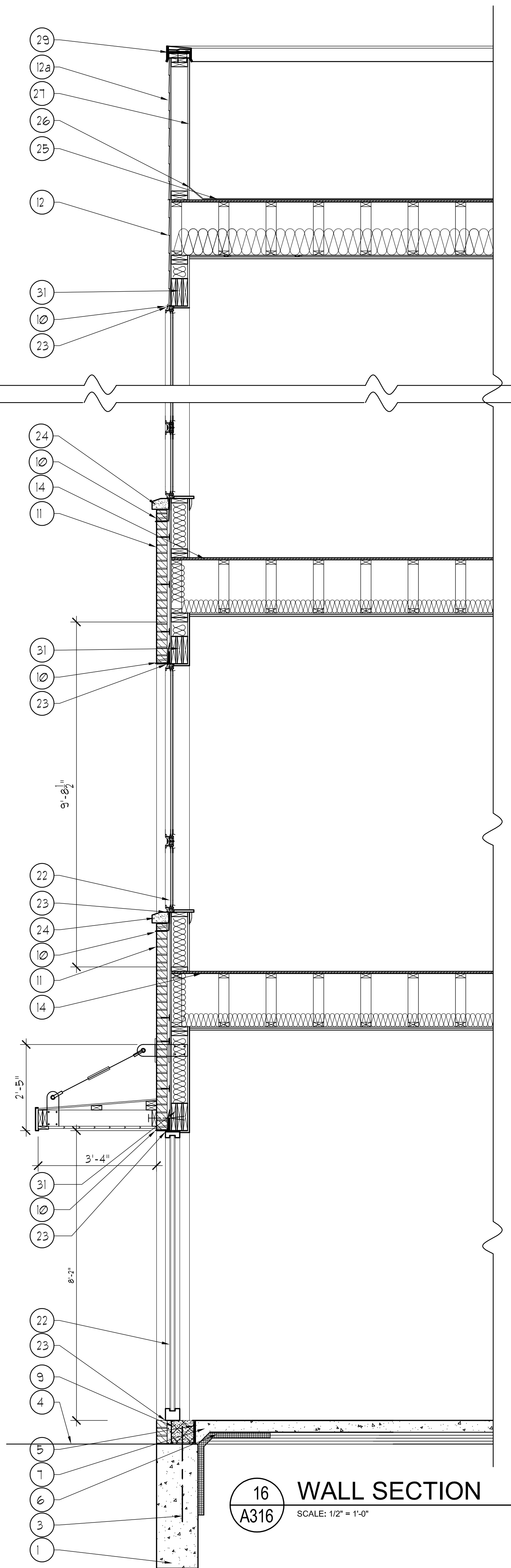
SHEET TITLE  
WALL SECTIONS

DWG. NO.  
A3.1.5  
of

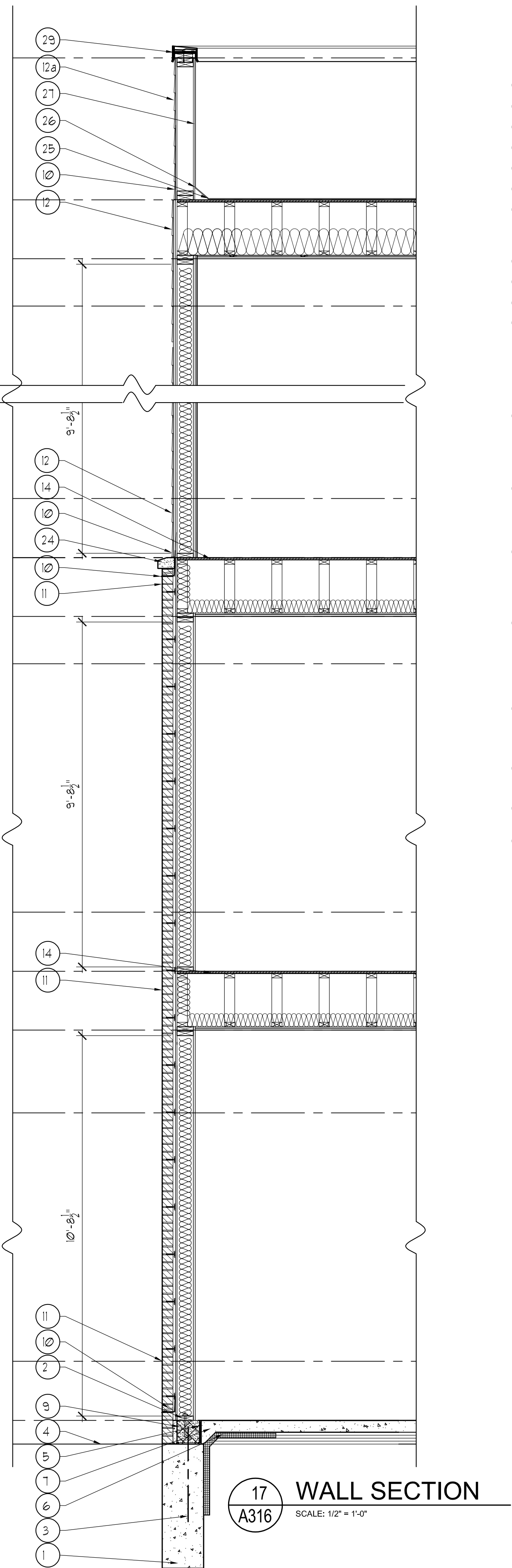




15 WALL SECTION  
A316 SCALE: 1/2" = 1'-0"



16 WALL SECTION  
A316 SCALE: 1/2" = 1'-0"



17 WALL SECTION  
A316 SCALE: 1/2" = 1'-0"

BUILDING SECTION ARCHITECTURAL KEYED NOTES:

- 1 CONC. TRENCH & COLUMN FOOTING BY OTHER
- 2 P.T. 2x6
- 3 PROVIDE 5 DOUELS PER WALL REINF. SCHEDULE
- 4 CONC. WALK PITCH 1/4" PER FOOT.
- 5 1/2" EXP. JOINT.
- 6 2"x24" RIGID INSULATION @ PERIMETER
- 7 4" CONC. SLAB  
6x6 REINF. 7:3:2:3 WWF. OVER  
6 MIL. VAPOR BARRIER (LAP MINIMUM 6") OVER  
4" COMP. SAND.
- 8 8" OR 12" CMU W/ HORIZ. REINF. @ 16" O.C. (LADDER TYPE)
- 9 GROUT COURSES AS SHOWN.
- 10 CONTINUOUS FLASHING (WITH WEEP HOLES @ 32" O.C. IN THE BRICK AREA)
- 11 BRICK VENEER  
W/ CORRUGATED METAL WALL TIES  
@ 16" O.C. HORIZ. & VERT. TYPE W/ 1" AIR SPACE OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
7/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
- 12 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
7/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
- 13 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
7/16" OSB OVER  
2x6 STUDS @ 16" O.C. OVER  
7/16" OSB
- 14 METAL PANEL OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
7/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO. U356)
- 15 23/32" THICK TAG WOOD STRUCTURAL PANELS (PLYWOOD OR ADVANTECH),  
MIN. GRADE UNDERLAMENT OVER  
FIRE-RAB. WOOD FLOOR TRUSSES (12"D. MIN.) @ 24" O.C. MAX  
(WITH R-19 INSULATION)  
RESILIENT CHANNELS NO. 26 MSG @ 16" O.C.  
5/8" G.W.B.  
(STC + 82, 1-HR FIRE RATED, UL NO. L538)
- 16 5/8" G.W.B. OVER  
RESILIENT CHANNELS (75 GA.) @ 24" O.C.  
2x6 WOOD STUDS @ 16" O.C.  
5/8" G.W.B.  
(STC-52, 1-HR FIRE RATED, UL NO. U311)
- 17 8" BLOCK  
W/ TRUSS TYPE REINF. @ 16" O.C.  
(2-HR FIRE RATED, UL NO. U505)
- 18 BRICK W/  
BRICK TIES @ 16" O.C. HORIZ. & VERT. TYPE
- 19 5/8" G.W.B. TYPE "X"  
ON EXTERIOR SIDE OF CHASE WALL OVER  
2-1/2" C-H STUDS @ 24" O.C.  
1" CORE BOARD ON INSIDE OF CHASE  
W/ J RUNNERS  
(1-HR FIRE RATED, UL NO. U415)
- 20 METAL SOFFIT
- 21 THRESHOLD MAX RISE 1/2"
- 22 DOOR (SEE DOOR SCHEDULE)
- 23 WINDOW (SEE ELEVATIONS FOR SIZE)
- 24 SLIDING DOOR (SEE ELEVATIONS FOR SIZE)
- 25 CONT. EXT. SEALANT
- 26 3-5/8" LIMESTONE SILL
- 27 FULLY ADHERED 60 MIL. EPDM ROOFING SYSTEM (15 YEAR WARRANTY)  
ON 3/4" EXTERIOR PLYWOOD  
ON PRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C.  
(WITH CELLULOSE SPRAY INSULATION THE DEPTH OF TRUSSES, R-50 MIN.)  
1/2" RESILIENT CHANNELS @ 16" O.C.  
5/8" G.W.B. TYPE "X"  
(1-HR FIRE RATED, UL NO. F522)
- 28 CANT.
- 29 RUN ROOFING UP AND RETURN UNDER THE COPING.
- 30 RUN ROOFING MIN 2'-0" UP
- 31 ROOF SUMP (SEE ROOF PLAN DETAIL)
- 32 OVERFLOW ROOF SUMP (SEE ROOF PLAN)
- 33 4" METAL COPING OVER 2x P.T. WOOD NAILED SECURED TO PARAPET WALL
- 34 ALUM. RAILING (WROUGHT IRON APPEARANCE) W/ STRUC. POST  
SEE STRUC. DETAIL FOR MORE INFORMATION
- 35 HEADER (SEE FRAMING PLAN)
- 36 BEAM (SEE FRAMING PLAN)
- 37 2'x2' SUSPENDED CEILING GRID
- 38 MECHANICAL DUCT. REFER TO MECHANICAL PLANS FOR SIZE
- 39 5/8" G.W.B. OVER  
2x4 STUDS  
OVER 2" INSULATION AROUND MECHANICAL DUCT
- 40 3/4" PLYWOOD OVER  
2x6 @ 16" O.C. OVER  
RESILIENT CHANNELS @ 16" O.C. OVER  
5/8" DRYWALL

NOTE: PLEASE REFER TO STRUCTURAL  
DRAWINGS FOR SHEAR WALL INFORMATION.

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PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN  
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JOB NO. 15-0353

D.B./C.B. R.A./P.D

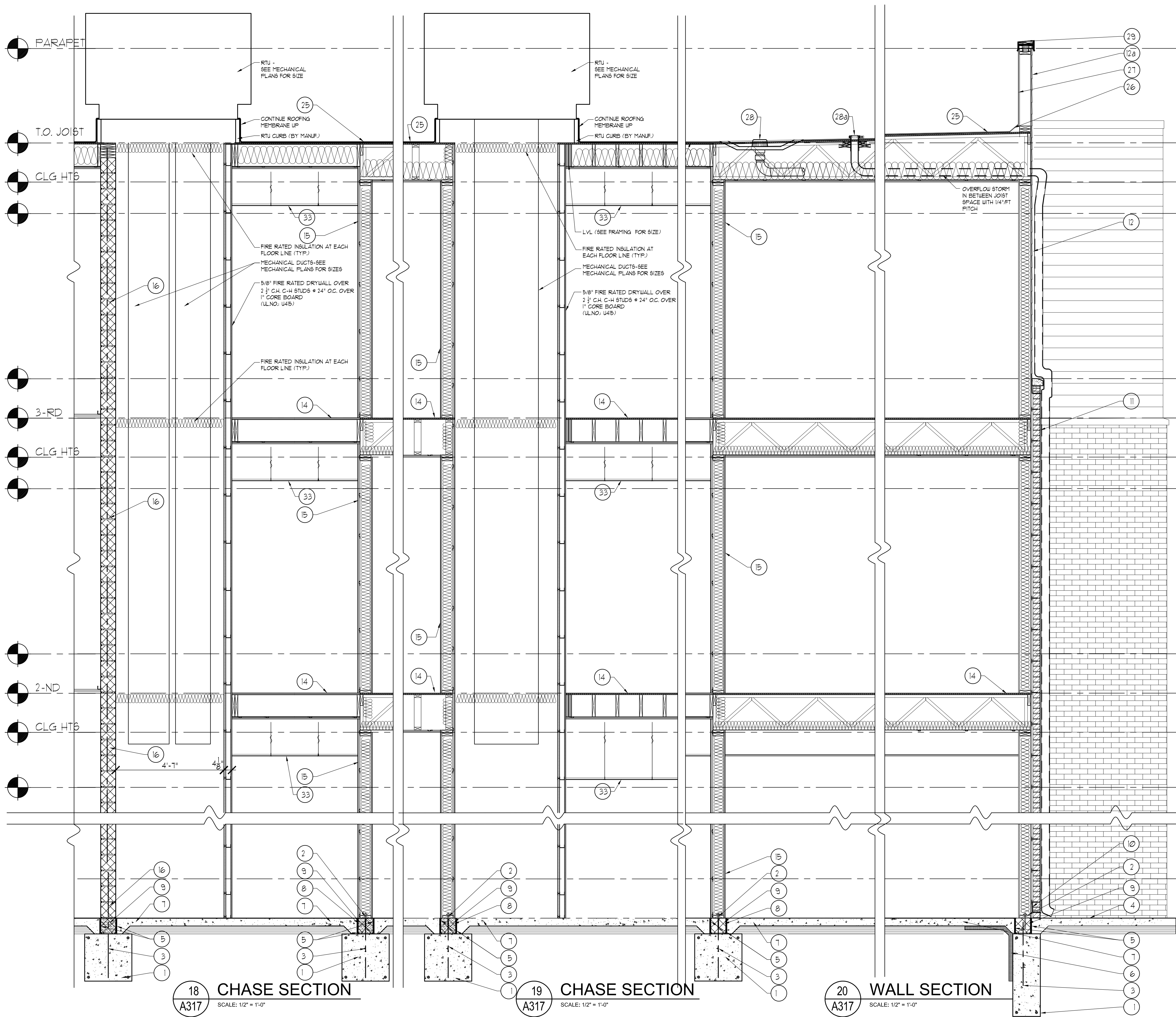
ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
WALL SECTIONS

DWG. NO.  
**A3.1.6**  
of





BUILDING SECTION ARCHITECTURAL KEYED NOTES:

- 1 CONC. TRENCH & COLUMN FOOTING BY OTHER
- 2 P.T. 2x6
- 3 PROVIDE 16 DOUELS PER WALL REINF. SCHEDULE
- 4 CONC. WALK PITCH 1/4" PER FOOT.
- 5 1/2" EXP. JOINT.
- 6 2"x24" RIGID INSULATION @ PERIMETER
- 7 4" CONC. SLAB  
6x6 REINF. 29x29 W/UF. OVER  
6 MIL VAPOR BARRIER (LAP MINIMUM 6") OVER  
4" CONCP. SAND.
- 8 8" OR 12" CMU W/ HORIZ. REINF. @ 16" O.C. (LADDER TYPE)
- 9 GROUT COURSES AS SHOWN.
- 10 CONTINUOUS FLASHING (WITH WEEP HOLES @ 32" O.C. IN THE BRICK AREA)
- 11 BRICK VENEER  
CORRUGATED METAL WALL TIES  
@ 16" O.C. HORIZ. & VERT. TYPE W/ 1" AIR SPACE OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" GWB.  
(1-HR FIRE RATED, UL NO: U356)
- 12 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" GWB.  
(1-HR FIRE RATED, UL NO: U356)
- 13 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" GWB.  
(1-HR FIRE RATED, UL NO: U356)
- 14 METAL PANEL OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/8" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" GWB.  
(1-HR FIRE RATED, UL NO: U356)
- 15 23/32" THICK TAG WOOD STRUCTURAL PANELS (PLYWOOD OR ADVANTECH),  
MIN. GRADE UNDERLAYMENT OVER  
PRE-FAB. WOOD FLOOR TRUSSES (2"D. MIN.) @ 24" O.C. MAX  
(WITH R-19 INSULATION)  
RESILIENT CHANNELS NO. 26 MSG @ 16" O.C.  
5/8" GWB.  
(STC = 62, 1-HR FIRE RATED, UL NO: L528)
- 16 5/8" GWB OVER  
RESILIENT CHANNELS (25 GA.) @ 24" O.C.  
2x6 WOOD STUDS @ 16" O.C.  
5/8" GWB.  
(STC=52, 1-HR FIRE RATED, UL NO: U311)
- 17 8" BLOCK  
W/ TRUSS TYPE REINF. @ 16" O.C.  
(2-HR FIRE RATED, UL NO: U305)
- 18 BRICK W/  
BRICK TIES @ 16" O.C. HORIZ. & VERT. TYPE
- 19 5/8" GWB TYPE 1X1  
ON EXTERIOR SIDE OF CHASE WALL OVER  
2-1/2" C-H STUDS @ 24" O.C.  
1" CORE BOARD ON INSIDE OF CHASE  
W/ J RUNNERS  
(1-HR FIRE RATED, UL NO: U415)
- 20 METAL SCOFFIT
- 21 THRESHOLD MAX RISE 1/2"
- 22 DOOR (SEE DOOR SCHEDULE)
- 23 WINDOW (SEE ELEVATIONS FOR SIZE)
- 24 SLIDING DOOR (SEE ELEVATIONS FOR SIZE)
- 25 CONT. EXT. SEALANT
- 26 3-5/8" LIMESTONE SILL
- 27 FULLY ADHERED 60 MIL EPDM ROOFING SYSTEM (5 YEAR WARRANTY)  
ON 3/4" EXTERIOR PLYWOOD  
ON PRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C.  
WITH CELLULOSE SPRAY INSULATION THE DEPTH OF TRUSSES, R-50 MIN  
1/2" RESILIENT CHANNELS @ 16" O.C.  
5/8" GWB TYPE 1X1  
(1-HR FIRE RATED, UL NO: F522)
- 28 CANT.
- 29 RUN ROOFING UP AND RETURN UNDER THE COPING.
- 210 RUN ROOFING MIN 2'-0" UP
- 211 ROOF SUMP (SEE ROOF PLAN DETAIL)
- 212 OVERFLOW ROOF SUMP (SEE ROOF PLAN)
- 213 4" METAL COPING OVER 2x P.T. WOOD NAILED SECURED TO PARAPET WALL
- 214 ALUM. RAILING (WROUGHT IRON APPEARANCE) W/ STRUC. POST  
SEE STRUC. DETAIL FOR MORE INFORMATION
- 215 HEADER (SEE FRAMING PLAN)
- 216 BEAM (SEE FRAMING PLAN)
- 217 2x2" SUSPENDED CEILING GRID
- 218 MECHANICAL DUCT, REFER TO MECHANICAL PLANS FOR SIZE
- 219 5/8" GWB OVER  
2x4 STUDS  
OVER 2" INSULATION AROUND MECHANICAL DUCT
- 220 3/4" PLYWOOD OVER  
2x6 @ 16" O.C. OVER  
RESILIENT CHANNELS @ 16" O.C. OVER  
5/8" DRYWALL

NOTE: PLEASE REFER TO STRUCTURAL  
DRAWINGS FOR SHEAR WALL INFORMATION.

**SMA**  
Serra Marko Associates  
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189 E. Big Beaver, Ste 106  
Troy, MI 48083  
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248.457.6903  
info@s-m-associates.com

PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING # 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN  
THE FIELD BY THE CONTRACTOR. THE  
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JOB NO. 15-0353

D.B./C.B. R.A./P.D

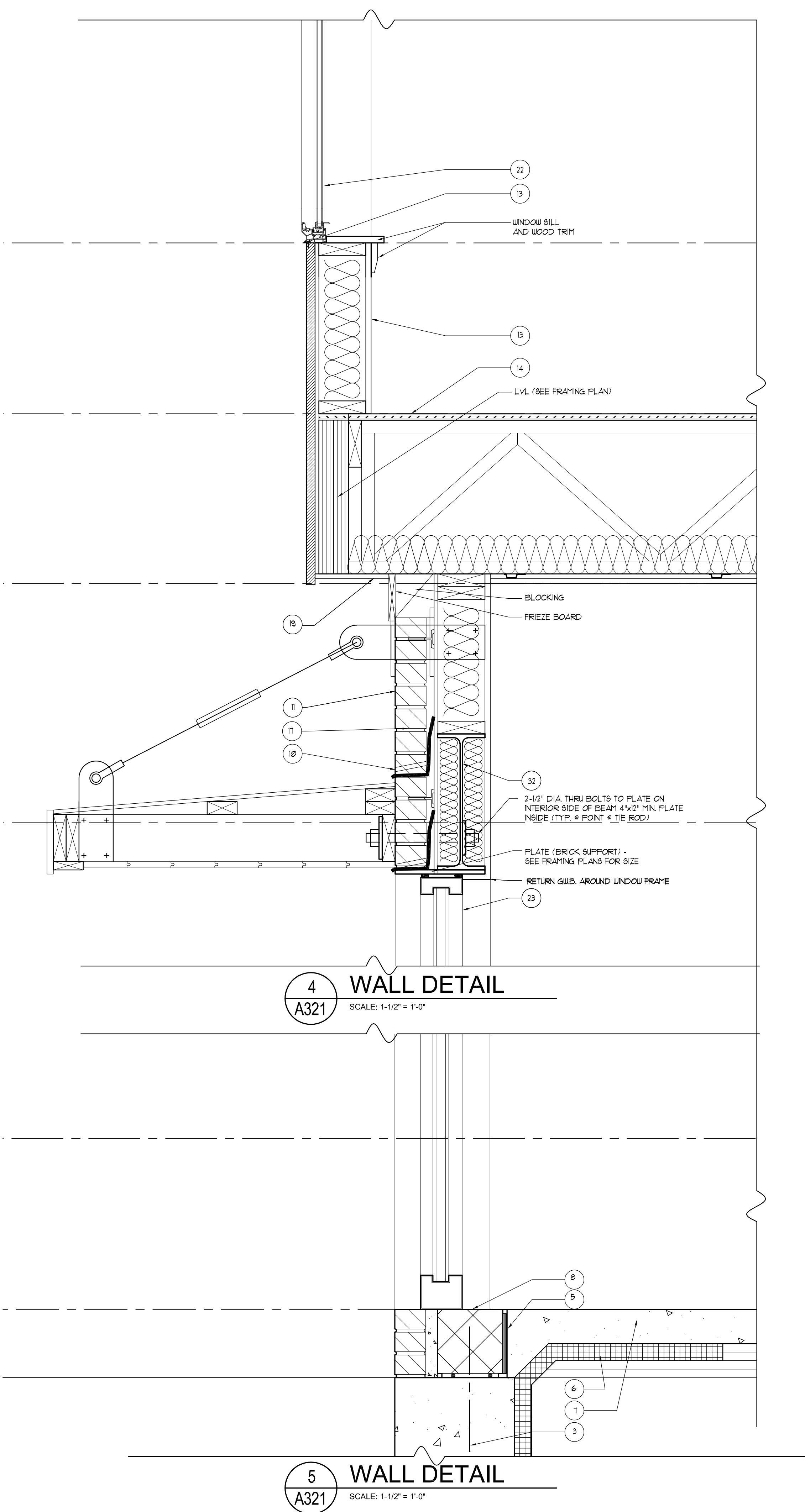
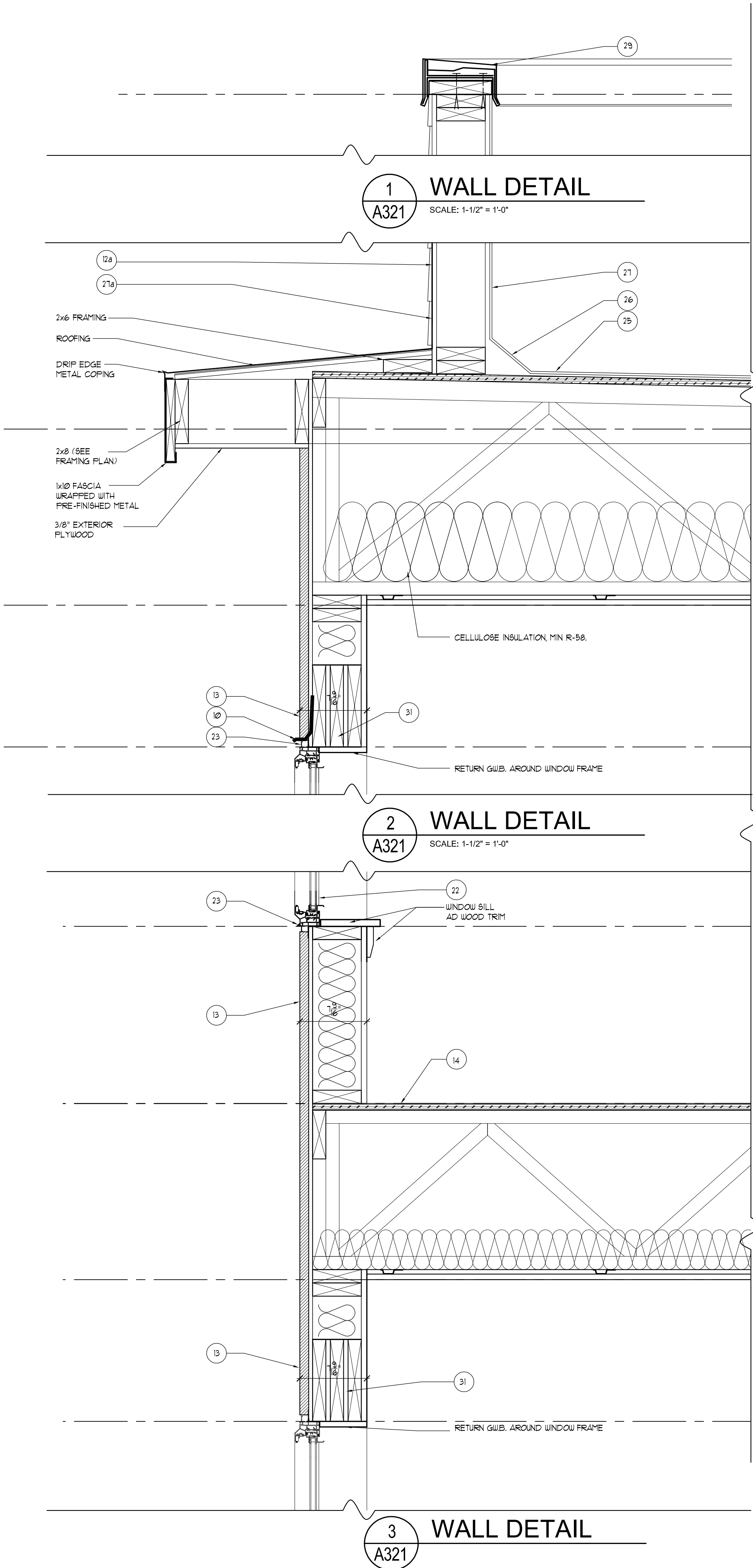
ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
WALL SECTIONS

DWG. NO.  
**A3.1.7**  
of





BUILDING SECTION ARCHITECTURAL KEYED NOTES:

- 1 CONC. TRENCH & COLUMN FOOTING BY OTHER
- 2 F.T. 2x6
- 3 PROVIDE #5 DOVELS PER WALL REINF. SCHEDULE
- 4 CONG. WALK PITCH 1/4" PER FOOT.
- 5 1/2" EXP. JOINT.
- 6 2"x24" RIGID INSULATION @ PERIMETER
- 7 4" CONG. SLAB  
6x6 REINF. 2x2x9 WULF. OVER  
6 MIL. VAPOR BARRIER (LAP MINIMUM 6") OVER  
4" COMP. SAND.
- 8 8" OR 12" CMU W/ HORIZ. REINF. @ 16" O.C. (LADDER TYPE)
- 9 GROUT COURSES AS SHOWN.
- 10 CONTINUOUS FLASHING (WITH WEEP HOLES @ 32" O.C. IN THE BRICK AREA)
- 11 BRICK VENEER  
W/ CORRUGATED METAL WALL TIES  
@ 16" O.C. HORIZ. & VERT. TYPE W/ 1" AIR SPACE OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/4" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO.: U356)
- 12 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/4" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO.: U356)
- 12a CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/4" OSB OVER  
2x6 STUDS @ 16" O.C. OVER  
1/4" OSB
- 13 METAL PANEL OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
1/4" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO.: U356)
- 14 23/32" THICK TAG WOOD STRUCTURAL PANELS (PLYWOOD OR ADVANTECH),  
MIN. GRADE UNDERLATHING OVER  
PRE-FAB. WOOD FLOOR TRUSSES (12"D. MIN.) @ 24" O.C. MAX  
(WITH R-19 INSULATION)  
RESILIENT CHANNELS NO. 26 MSG @ 16" O.C.  
5/8" G.W.B.  
(STC = 62, 1-HR FIRE RATED, UL NO.: L528)
- 15 5/8" G.W.B. OVER  
RESILIENT CHANNELS (25 GA.) @ 24" O.C.  
2x6 WOOD STUDS @ 16" O.C.  
5/8" G.W.B.  
(STC=52, 1-HR FIRE RATED, UL NO.: U311)
- 16 8" BLOCK  
W/ TRUSS TYPE REINF. @ 16" O.C.  
(2-HR FIRE RATED, UL NO.: U305)
- 17 BRICK W/  
BRICK TIES @ 16" O.C. HORIZ. & VERT. TYPE
- 18 5/8" G.W.B. TYPE "X"  
ON EXTERIOR SIDE OF CHASE WALL OVER  
2-1/2" C-H STUDS @ 24" O.C.  
1" CORE BOARD ON INSIDE OF CHASE  
W/ J-RUNNERS  
(1-HR FIRE RATED, UL NO.: U415)
- 19 METAL SOFFIT
- 20 THRESHOLD MAX RISE 1/2"
- 21 DOOR (SEE DOOR SCHEDULE)
- 22 WINDOW (SEE ELEVATIONS FOR SIZE)
- 22a SLIDING DOOR (SEE ELEVATIONS FOR SIZE)
- 23 CONT. EXT. SEALANT
- 24 3-5/8" LIMESTONE SILL
- 25 FULLY ADHERED 60 MIL EPDM ROOFING SYSTEM (15 YEAR WARRANTY)  
ON 3/4" EXTERIOR PLYWOOD  
ON PRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C.  
(WITH CELLULOSE SPRAY INSULATION THE DEPTH OF TRUSSES, R-58 MIN)  
1/2" RESILIENT CHANNELS @ 16" O.C.  
5/8" G.W.B. TYPE "X"  
(1-HR FIRE RATED, UL NO.: F522)
- 26 CANT.
- 27 RUN ROOFING UP AND RETURN UNDER THE COPING.
- 27a RUN ROOFING MIN 2'-0" UP
- 28 ROOF SUMP (SEE ROOF PLAN DETAIL)
- 28a OVERFLOW ROOF SUMP (SEE ROOF PLAN)
- 29 4" METAL COPING OVER 2x P.T. WOOD NAILED SECURED TO PARAPET WALL
- 30 ALUM. RAILING (WROUGHT IRON APPEARANCE) W/ STRUC. POST  
SEE STRUC. DETAIL FOR MORE INFORMATION
- 31 HEADER (SEE FRAMING PLAN)
- 32 BEAM (SEE FRAMING PLAN)
- 33 2x2' SUSPENDED CEILING GRID
- 34 MECHANICAL DUCT, REFER TO MECHANICAL PLANS FOR SIZE
- 35 5/8" G.W.B. OVER  
2x4 STUDS  
OVER 2" INSULATION AROUND MECHANICAL DUCT
- 36 3/4" PLYWOOD OVER  
2x6 @ 16" O.C. OVER  
RESILIENT CHANNELS @ 16" O.C. OVER  
5/8" DRYWALL

NOTE: PLEASE REFER TO STRUCTURAL DRAWINGS FOR SHEAR WALL INFORMATION.

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PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING # 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATION OF ALL DIMENSIONS.

JOB NO. 15-0353

D.B./C.B. R.A./P.D

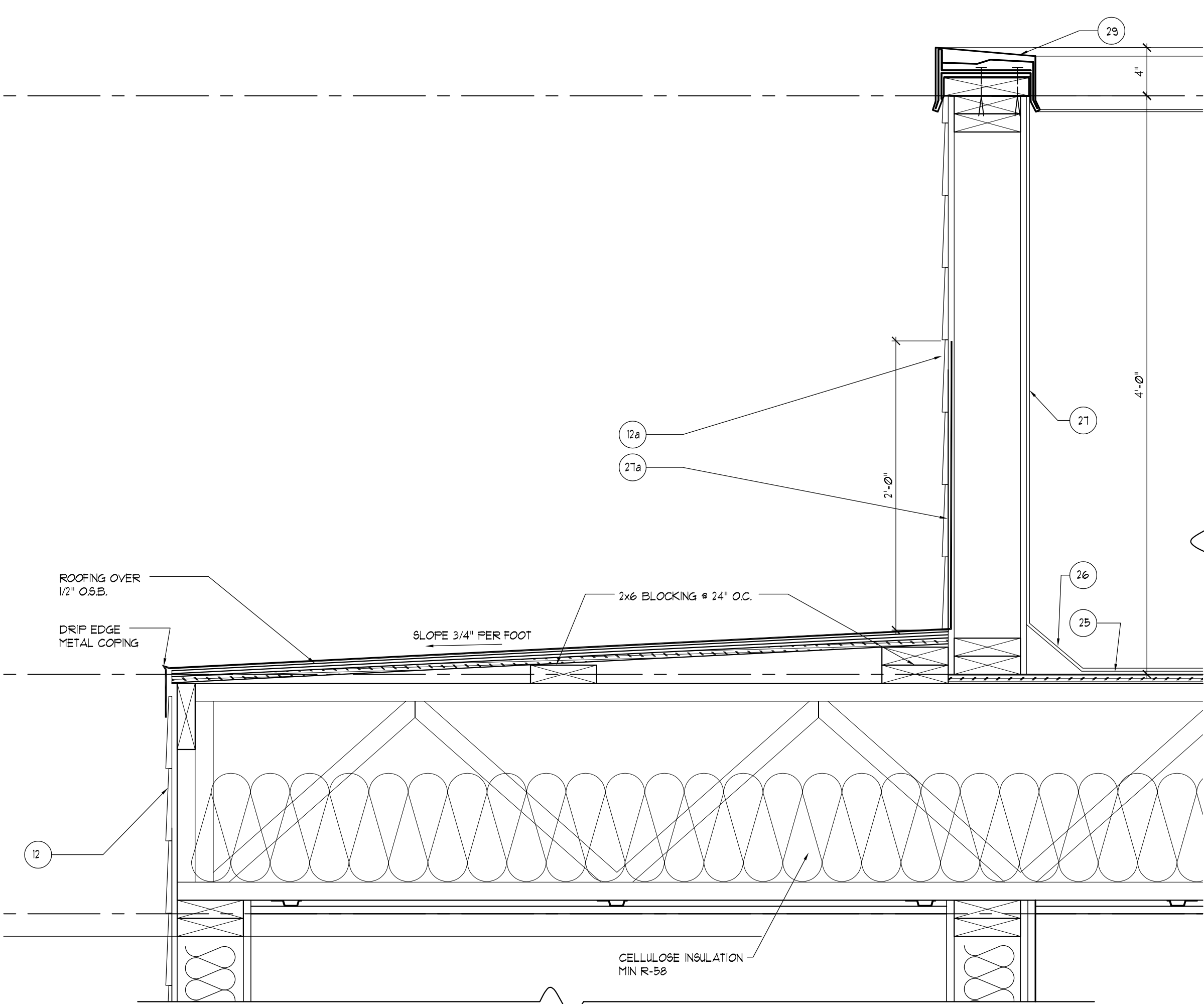
ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

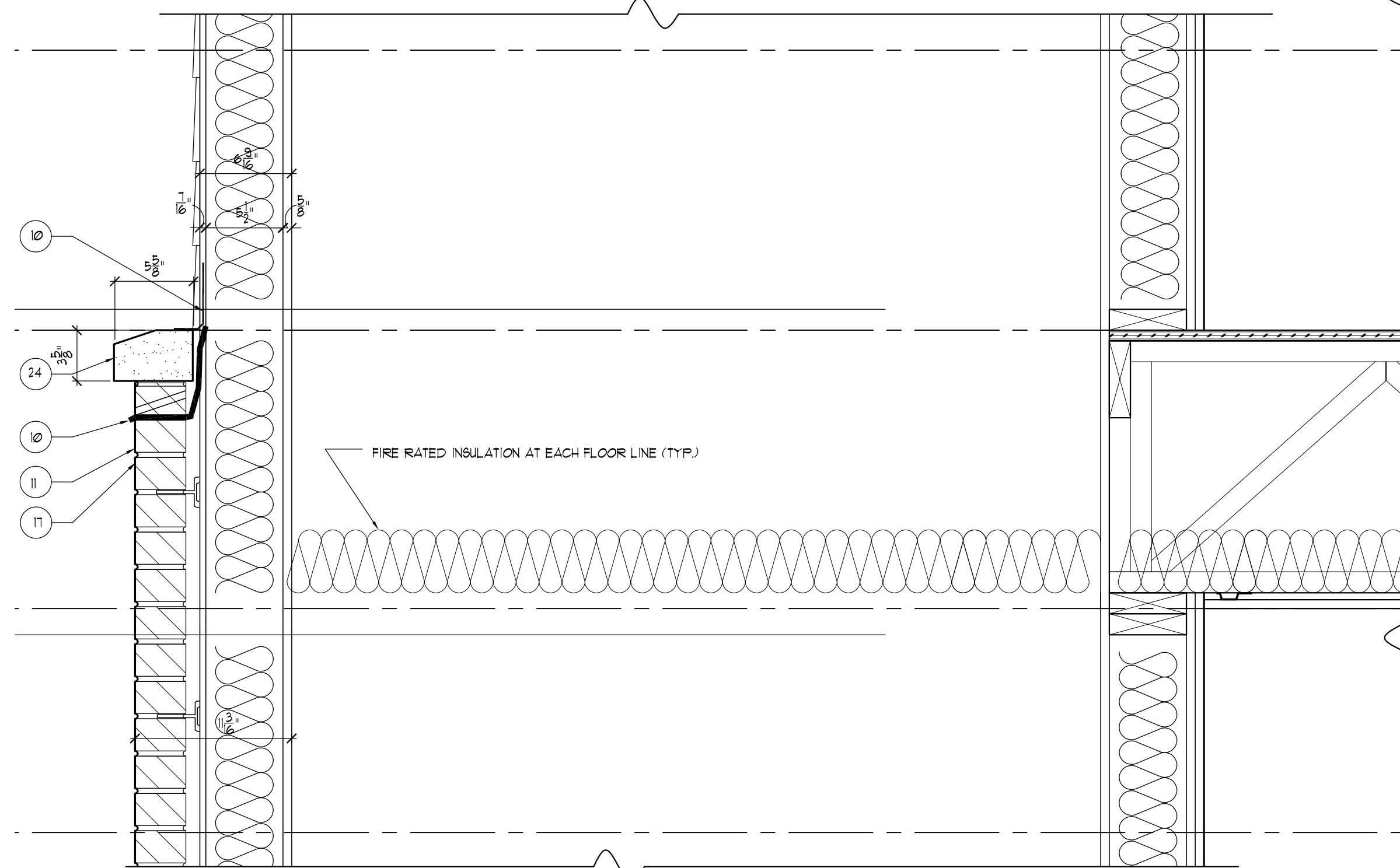
SHEET TITLE  
WALL DETAILS

DWG. NO.  
**A3.2.1**  
of

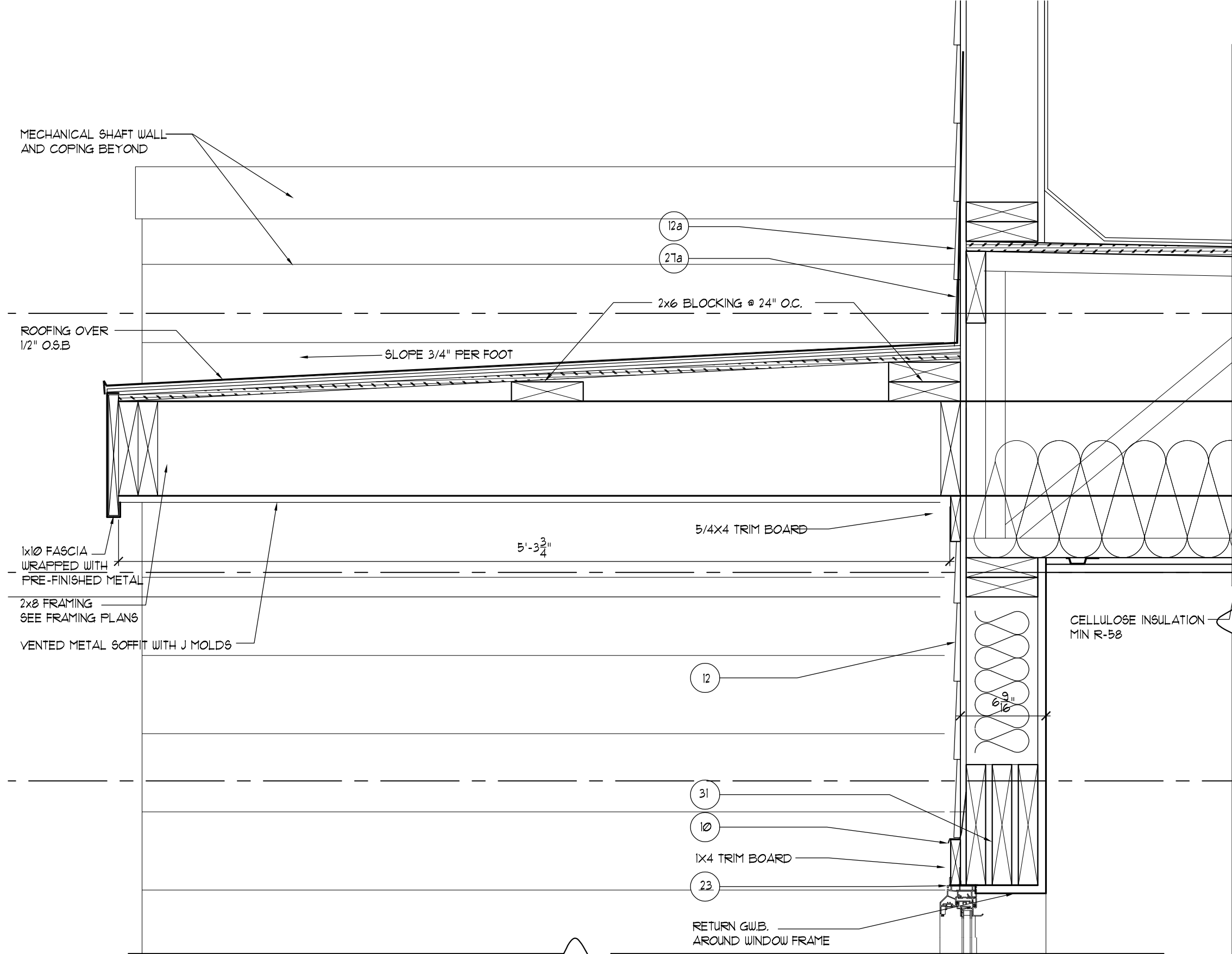




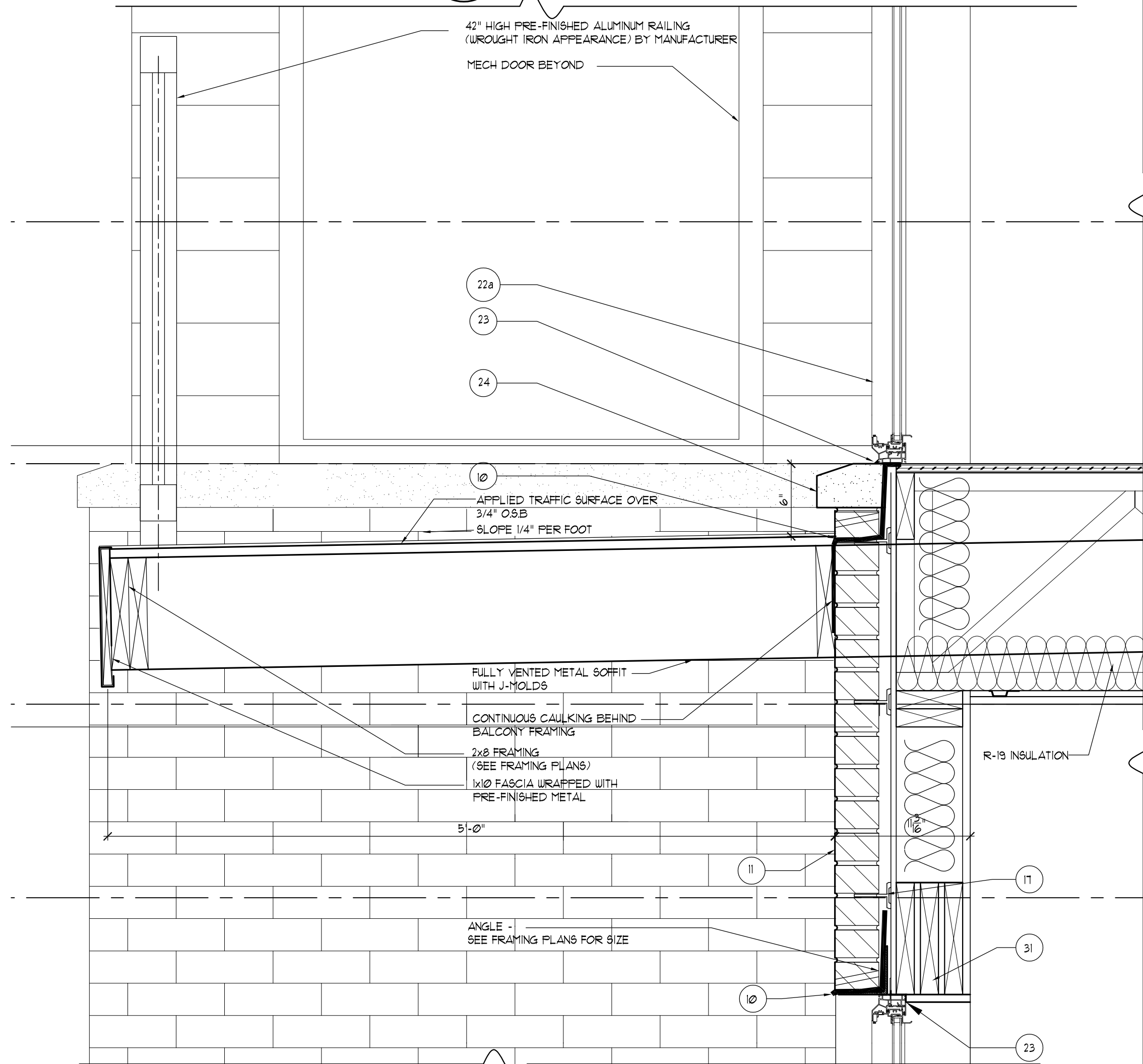
1 WALL DETAIL  
A322 SCALE: 1-1/2" = 1'-0"



2 WALL DETAIL  
A322 SCALE: 1-1/2" = 1'-0"



3 WALL DETAIL  
A322 SCALE: 1-1/2" = 1'-0"



4 WALL DETAIL  
A322 SCALE: 1-1/2" = 1'-0"

BUILDING SECTION ARCHITECTURAL KEYED NOTES:

- 1 CONC. TRENCH & COLUMN FOOTING BY OTHER
- 2 F.T. 2x6
- 3 PROVIDE #5 DOUELS PER WALL REINF. SCHEDULE
- 4 CONC. WALK PITCH 1/4" PER FOOT.
- 5 1/2" EXP. JOINT.
- 6 2"x24" RIGID INSULATION @ PERIMETER
- 7 4" CONC. SLAB  
6x6 REINF. 25x25 WWF. OVER  
6 MIL. VAPOR BARRIER (LAP MINIMUM 6") OVER  
4" COMP. SAND.
- 8 8" OR 12" CMU W/ HORIZ. REINF. @ 16" O.C. (LADDER TYPE)
- 9 GROUT COURSES AS SHOWN
- 10 CONTINUOUS FLASHING. (WITH WEEP HOLES @ 32" O.C. IN THE BRICK AREA)
- 11 BRICK VENEER  
W/ CORRUGATED METAL WALL TIES  
@ 16" O.C. HORIZ. & VERT. TYPE W/ 1" AIR SPACE OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
7/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO.: U356)
- 12 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
7/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO.: U356)
- 13 CEMENT SIDING OVER  
MOISTURE INFILTRATION BARRIER (TYVEK) OVER  
7/16" OSB OVER  
2x6 STUDS @ 16" O.C. W/ R-21 BATT. INSULATION OVER  
5/8" G.W.B.  
(1-HR FIRE RATED, UL NO.: U356)
- 14 23/32" THICK 1x6 WOOD STRUCTURAL PANELS (PLYWOOD OR ADVANTECH),  
MIN. GRADE UNDERLAYMENT OVER  
PRE-FAB. WOOD FLOOR TRUSSES (12"D. MIN.) @ 24" O.C. MAX  
(WITH R-19 INSULATION)  
RESILIENT CHANNELS NO. 26 MSG @ 16" O.C.  
5/8" G.W.B.  
(5TC @ 62, 1-HR FIRE RATED, UL NO.: L528)
- 15 5/8" G.W.B. OVER  
RESILIENT CHANNELS (25 GA.) @ 24" O.C.  
2x6 WOOD STUDS @ 16" O.C.  
5/8" G.W.B.  
(5TC-52, 1-HR FIRE RATED, UL NO.: U311)
- 16 8" BLOCK  
W/ TRUSS TYPE REINF. @ 16" O.C.  
(2-HR FIRE RATED, UL NO.: U305)
- 17 BRICK W/  
BRICK TIES @ 16" O.C. HORIZ. & VERT. TYPE
- 18 5/8" G.W.B. TYPE "X"  
ON EXTERIOR SIDE OF CHASE WALL OVER  
2-1/2" C-H STUDS @ 24" O.C.  
1" CORE BOARD ON INSIDE OF CHASE  
W/ J RUNNERS  
(1-HR FIRE RATED, UL NO.: U415)
- 19 METAL SOFFIT
- 20 THRESHOLD MAX RISE 1/2"
- 21 DOOR (SEE DOOR SCHEDULE)
- 22 WINDOW (SEE ELEVATIONS FOR SIZE)
- 23 SLIDING DOOR (SEE ELEVATIONS FOR SIZE)
- 24 CONT. EXT. SEALANT
- 25 3-5/8" LIMESTONE SILL
- 26 FULLY ADHERED 60 MIL. EPDM ROOFING SYSTEM (15 YEAR WARRANTY)  
ON 3/4" EXTERIOR PLYWOOD  
ON PRE-ENGINEERED WOOD ROOF TRUSSES @ 24" O.C.  
(WITH CELLULOSE SPRAY INSULATION THE DEPTH OF TRUSSES, R-58 MIN)  
1/2" RESILIENT CHANNELS @ 16" O.C.  
5/8" G.W.B. TYPE "X"  
(1-HR FIRE RATED, UL NO.: F522)
- 27 CANT.
- 28 RUN ROOFING UP AND RETURN UNDER THE COPING.
- 29 RUN ROOFING MIN 2'-0" UP
- 30 ROOF SUMP (SEE ROOF PLAN DETAIL)
- 31 OVERFLOW ROOF SUMP (SEE ROOF PLAN)
- 32 4" METAL COPING OVER 2x F.T. WOOD NAILED SECURED TO PARAPET WALL
- 33 ALUM. RAILING (WROUGHT IRON APPEARANCE) W/ STRUC. POST  
SEE STRUC. DETAIL FOR MORE INFORMATION
- 34 HEADER (SEE FRAMING PLAN)
- 35 BEAM (SEE FRAMING PLAN)
- 36 2"x2" SUSPENDED CEILING GRID
- 37 MECHANICAL DUCT, REFER TO MECHANICAL PLANS FOR SIZE
- 38 5/8" G.W.B. OVER  
2x4 STUDS  
OVER 2" INSULATION AROUND MECHANICAL DUCT
- 39 3/4" PLYWOOD OVER  
2x6 @ 16" O.C. OVER  
RESILIENT CHANNELS @ 16" O.C. OVER  
5/8" DRYWALL

NOTE: PLEASE REFER TO STRUCTURAL  
DRAWINGS FOR SHEAR WALL INFORMATION.

SMA

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PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING # 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN  
THE FIELD BY THE CONTRACTOR. THE  
CONTRACTOR IS SOLELY RESPONSIBLE  
FOR COORDINATION OF ALL DIMENSIONS.

JOB NO. 15-0353

D.B./C.B. R.A./P.D

ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
WALL DETAILS

DWG. NO.  
A3.2.2  
of



PROJECT NAME:  
TROY CROSSING  
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BUILDING# 5

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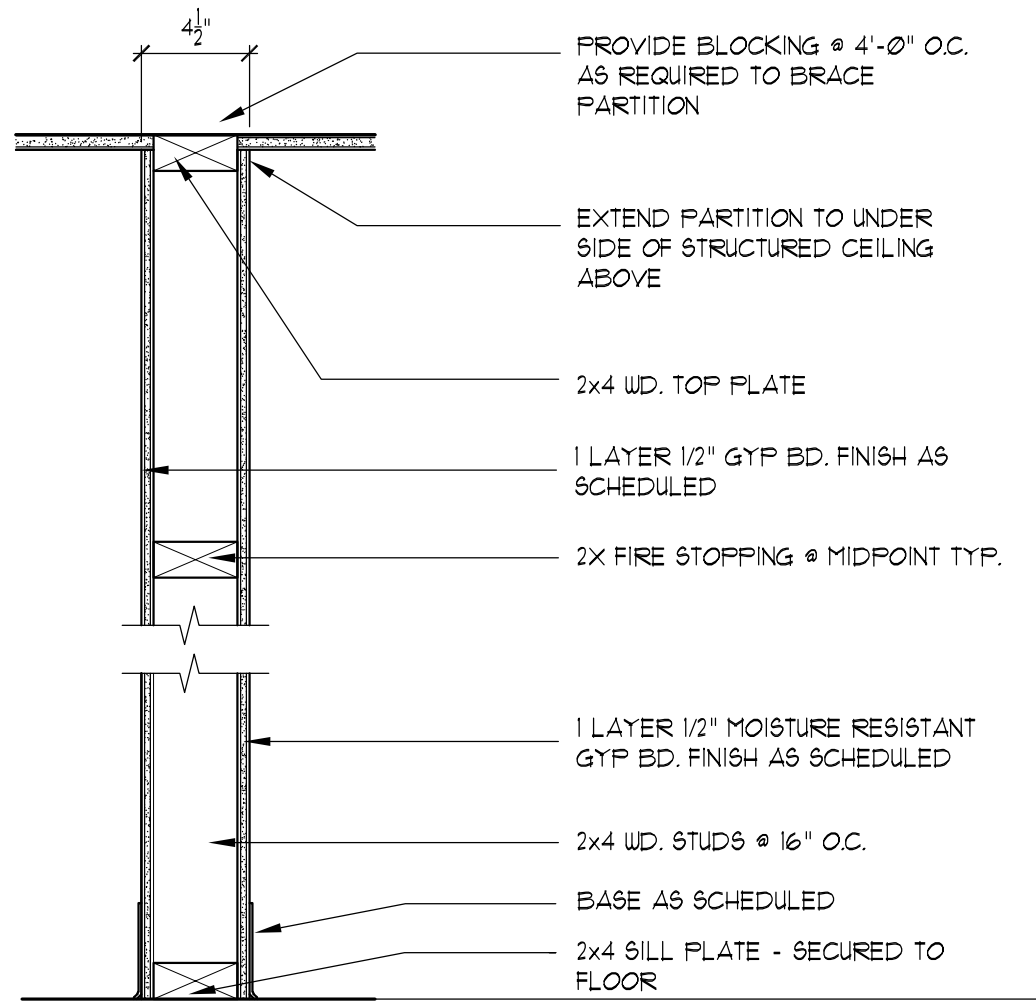
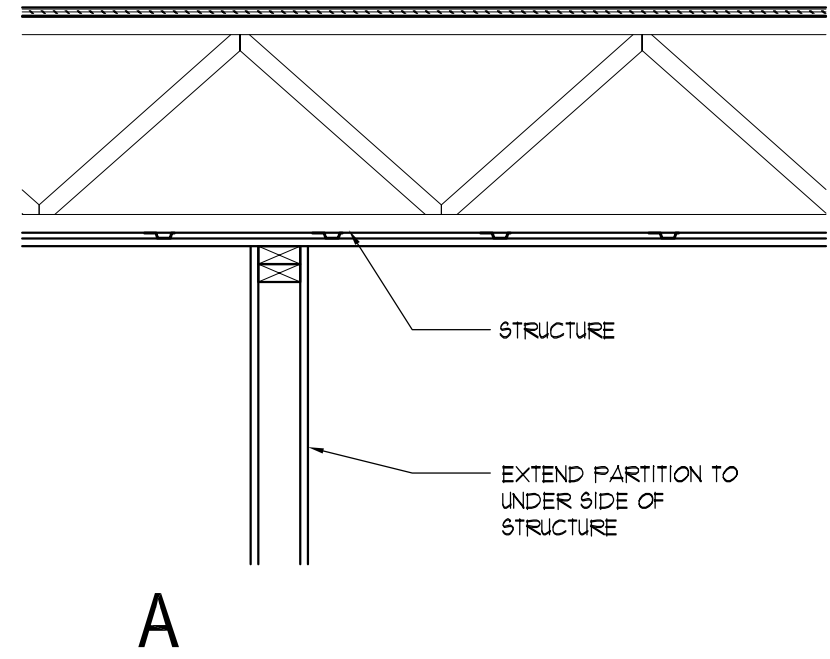
ISSUANCES

NO	DESCRIPTION	DATE
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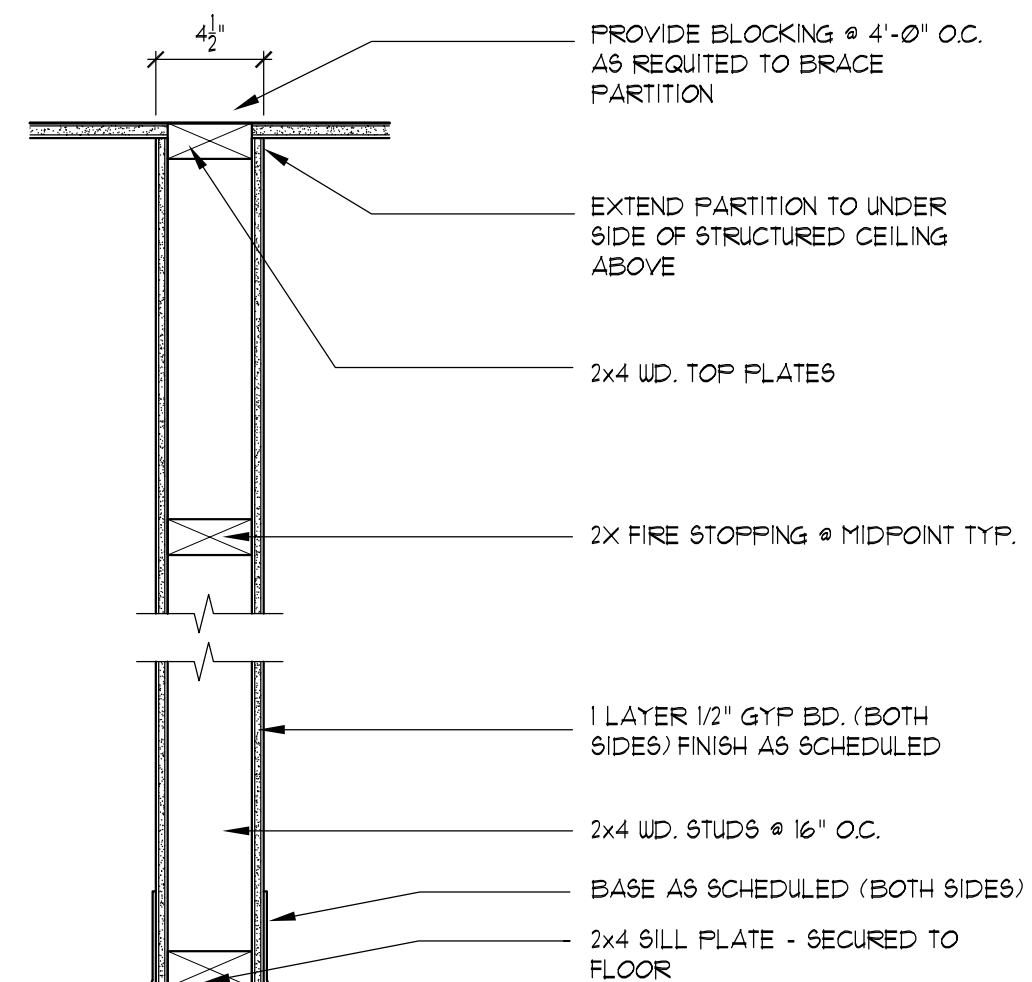
SHEET TITLE  
WALL SCHEDULE

DWG. NO.  
A4.0.1  
of

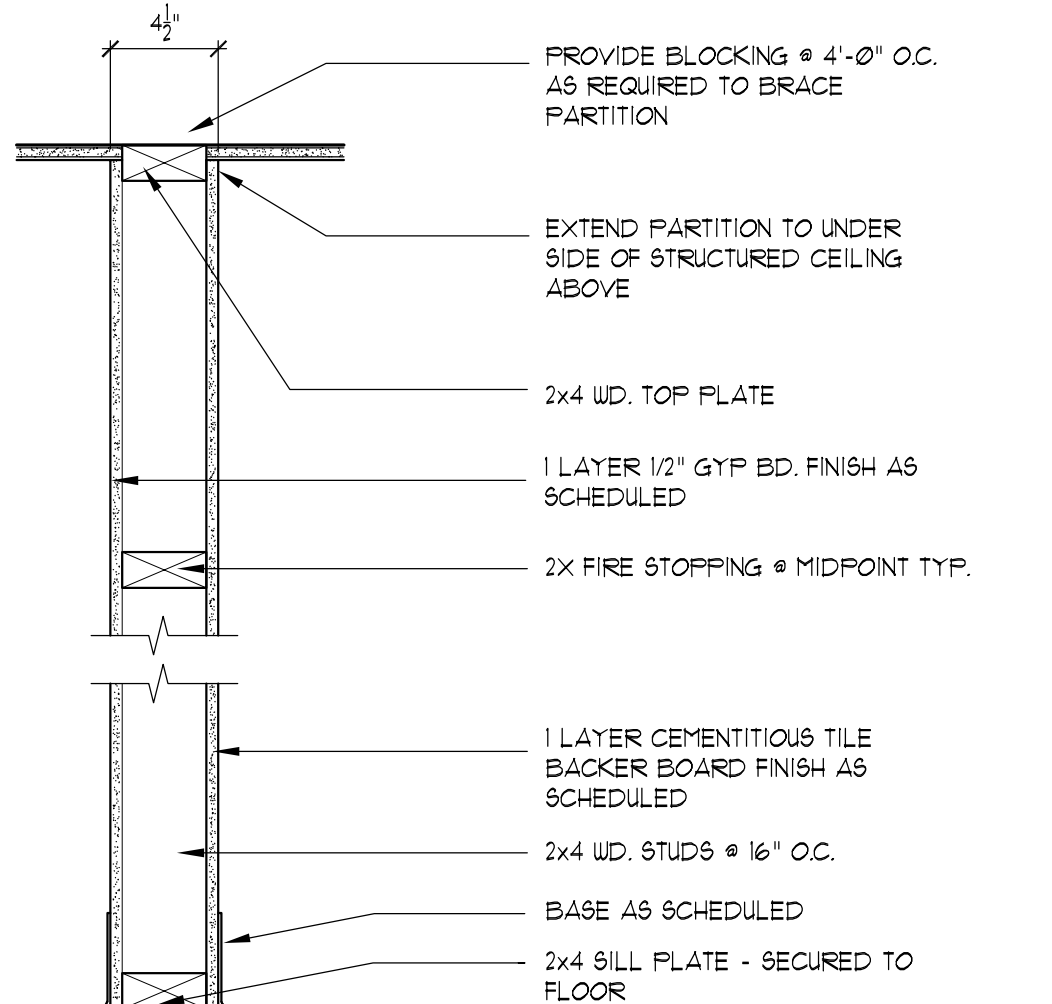
PARTITION CONDITION CODE	
PARTITION TYPE SYMBOL	
<div><div>FI</div><div>A11</div></div>	PARTITION TYPE - SEE WALL LEGEND
	FIRE RESISTANCE RATING (IN HOURS)
	PARTITION CONDITION CODE



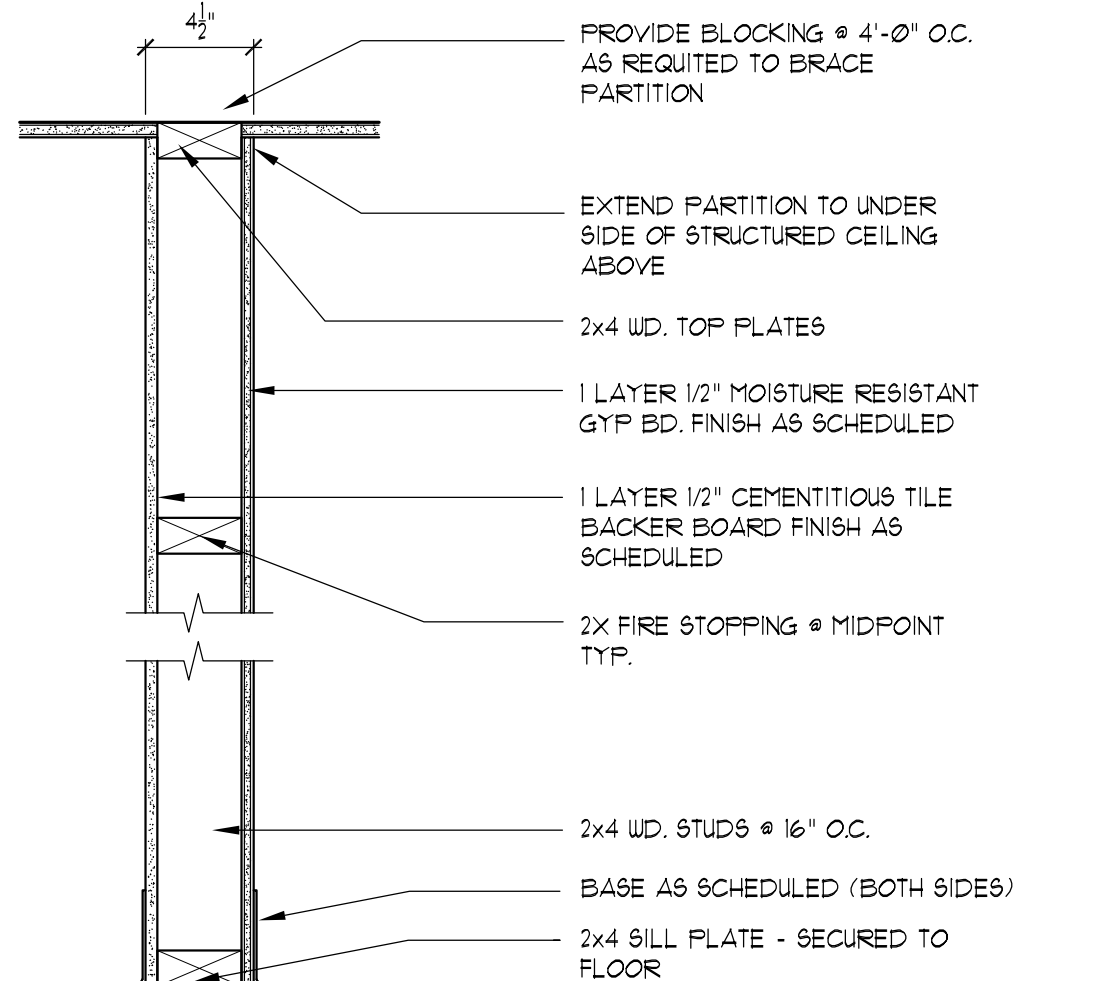
1 PARTITION TYPE P-1  
A401 SCALE: 1 1/2" = 1'-0"



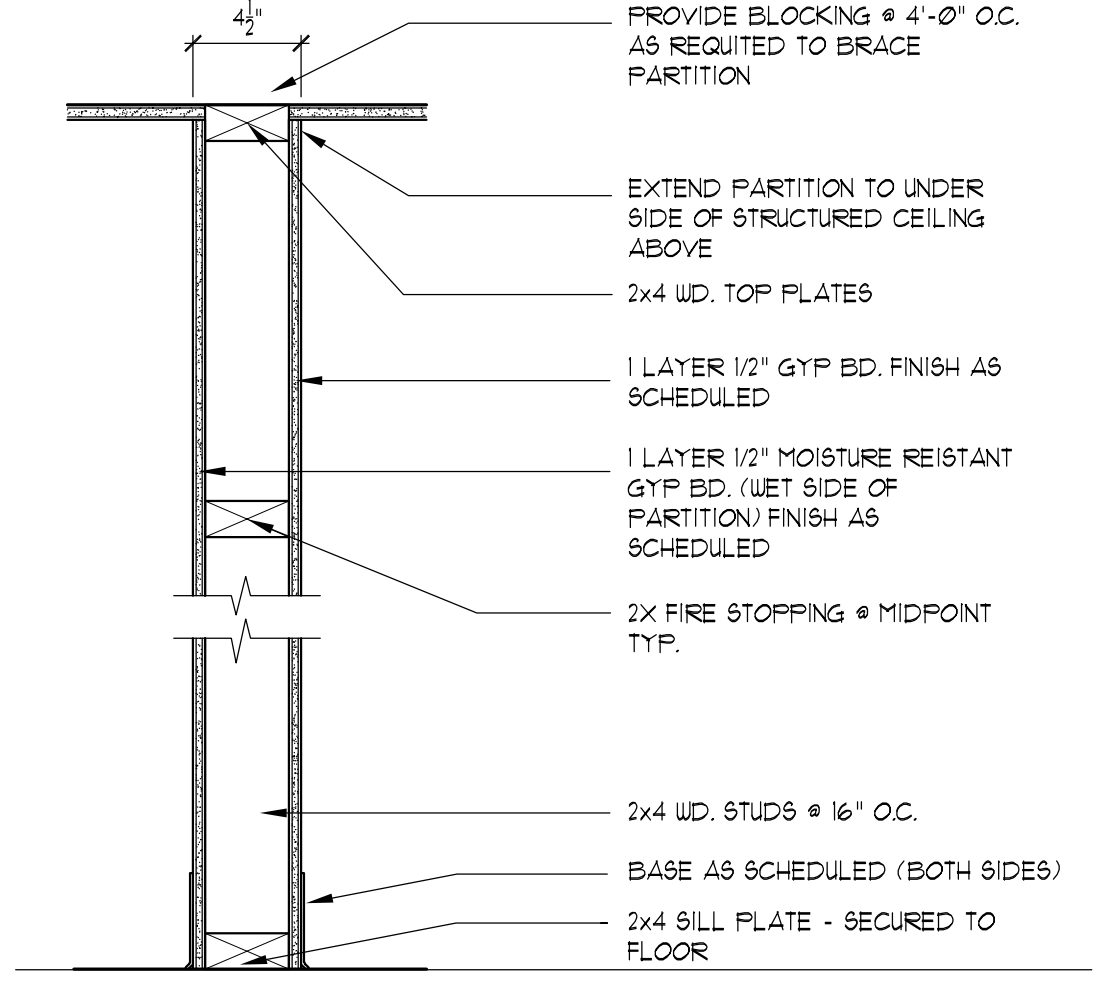
2 PARTITION TYPE P-2  
A401 SCALE: 1 1/2" = 1'-0"



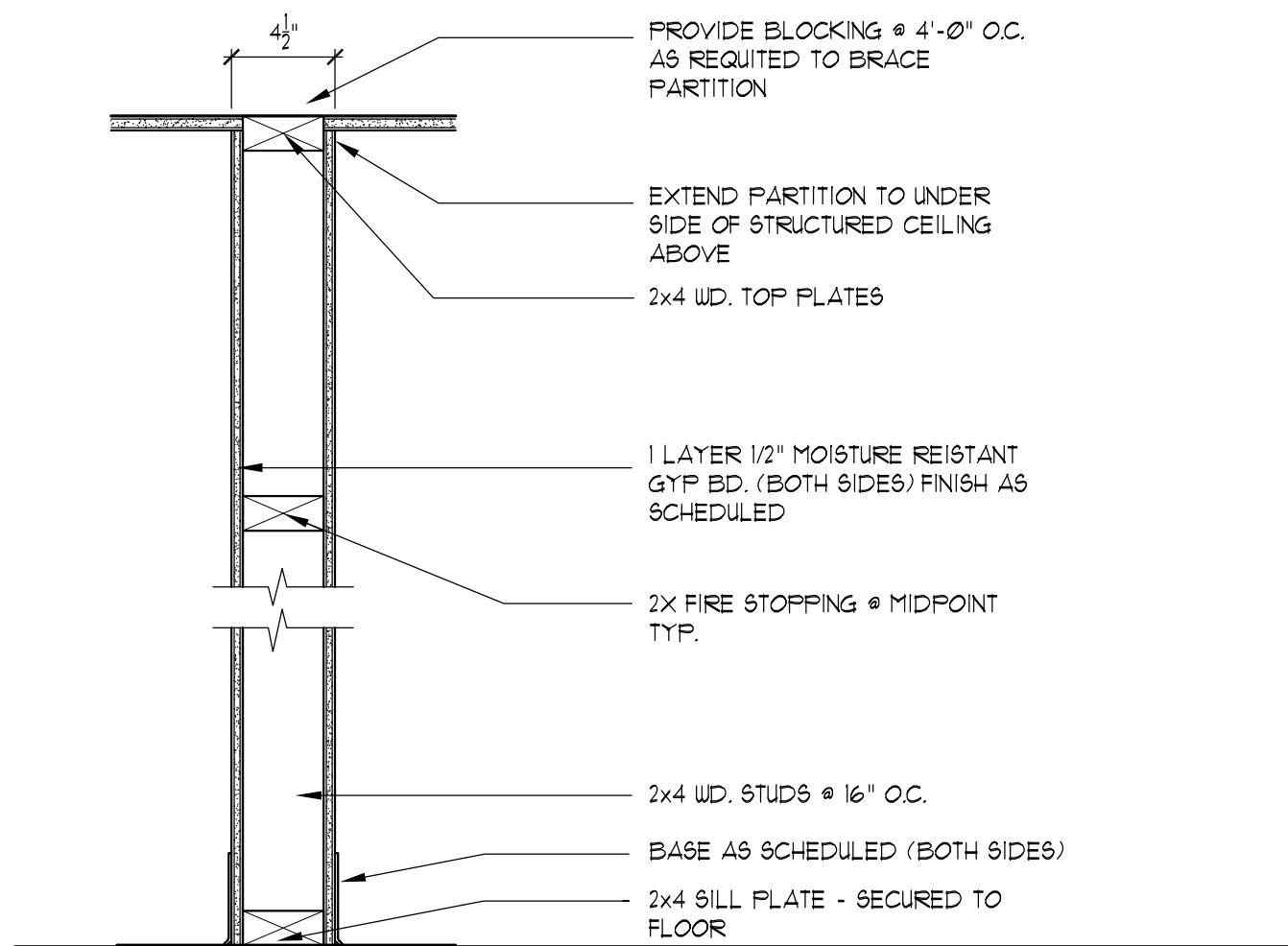
3 PARTITION TYPE P-3  
A401 SCALE: 1 1/2" = 1'-0"



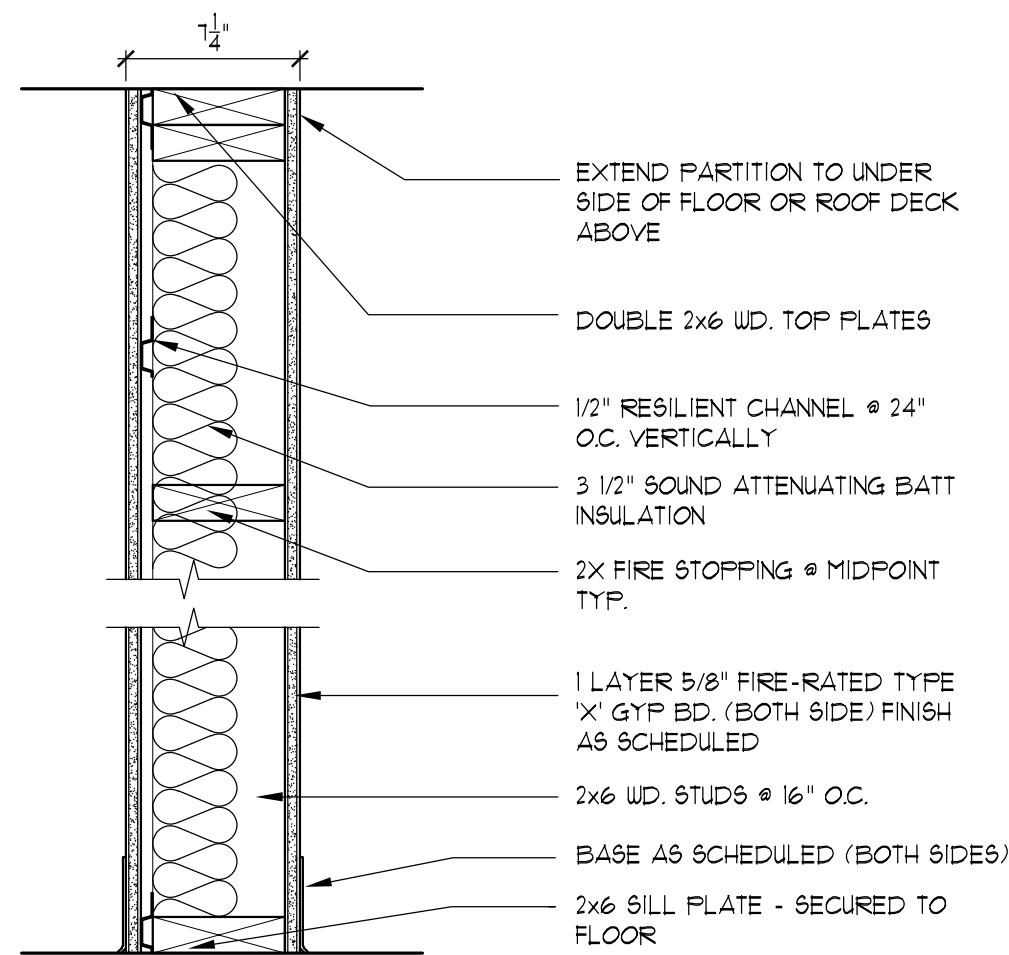
4 PARTITION TYPE P-4  
A401 SCALE: 1 1/2" = 1'-0"



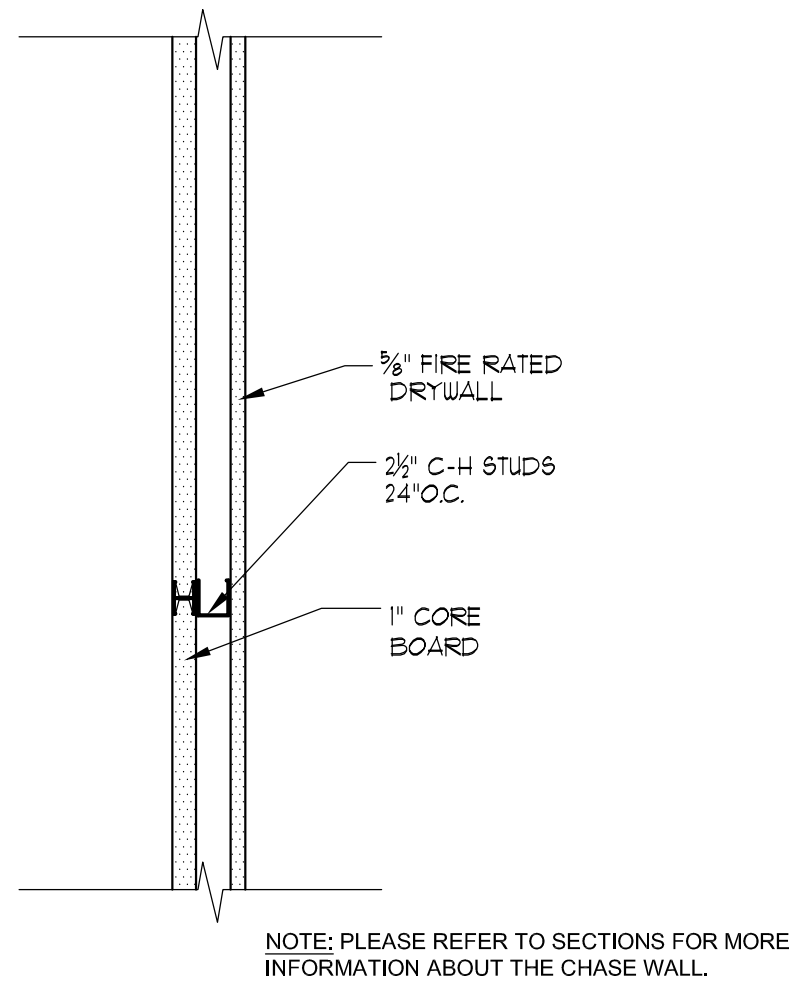
5 PARTITION TYPE P-5  
A401 SCALE: 1 1/2" = 1'-0"



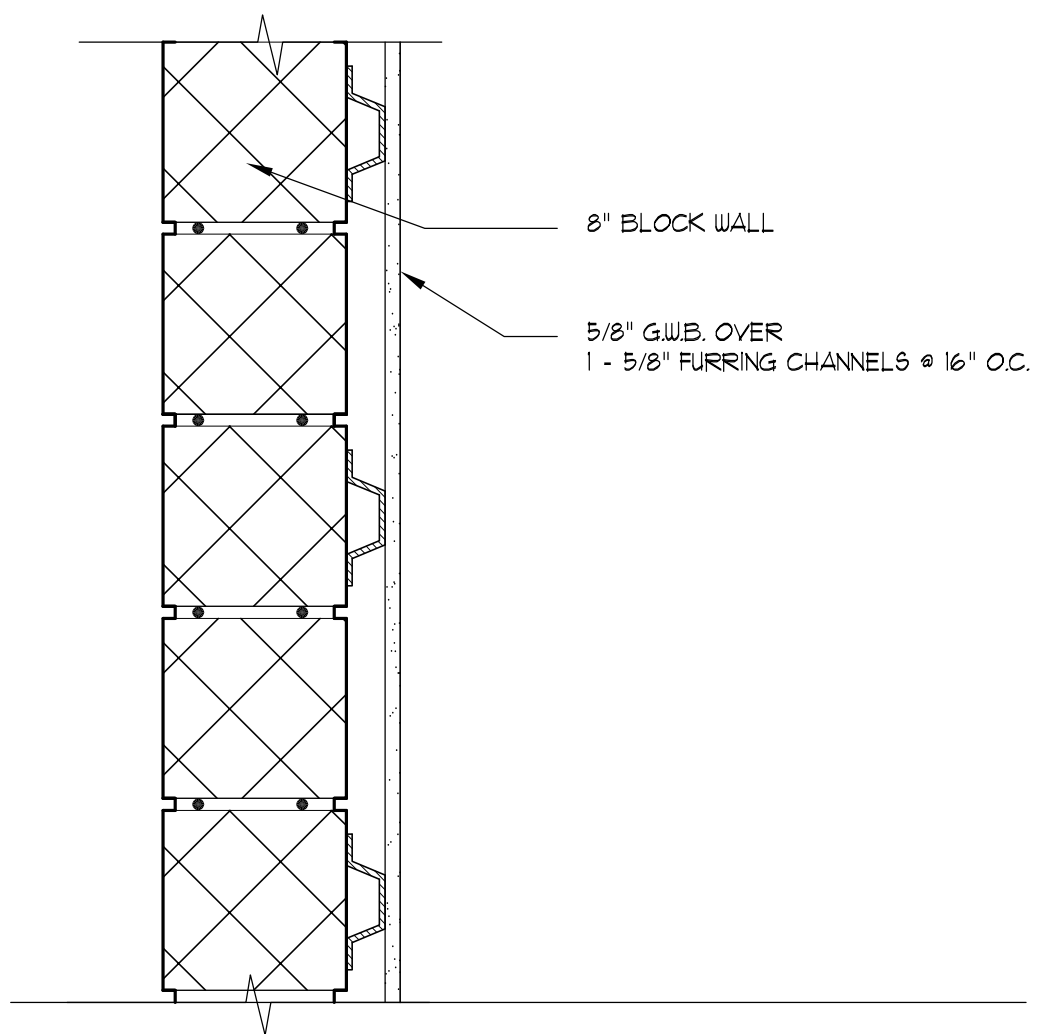
6 PARTITION TYPE P-6  
A401 SCALE: 1 1/2" = 1'-0"



7 WALL TYPE W-1  
(UL. NO:U311 - 1 HR RATED)  
A401 SCALE: 1 1/2" = 1'-0"



8 WALL TYPE W-2  
(UL.NO:U415 - 1 HR RATED)  
A401 SCALE: 1 1/2" = 1'-0"

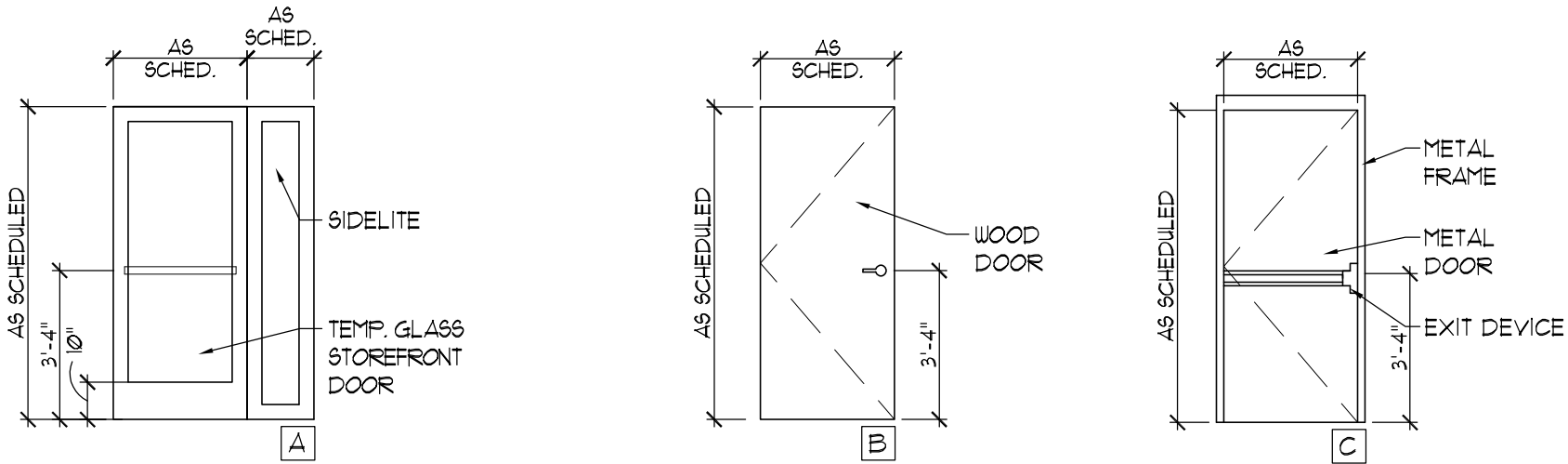


9 WALL TYPE W-3  
A401 SCALE: 1 1/2" = 1'-0"

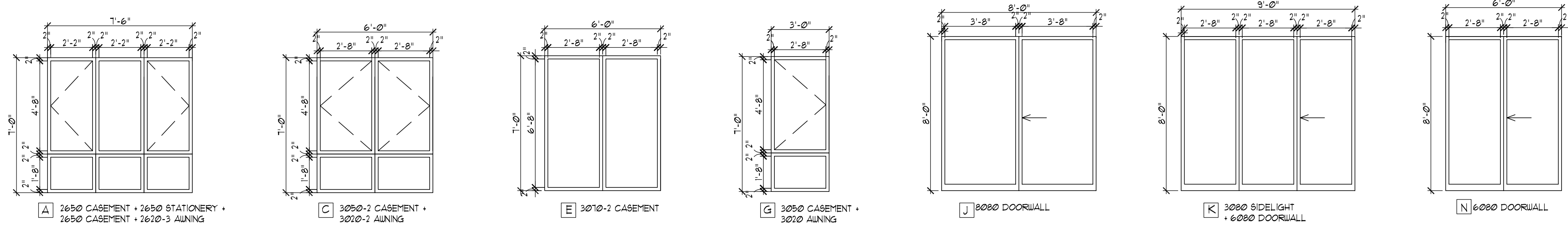


DOOR SCHEDULE												
DOOR								FRAME				
NO.	LOCATION	OPENING SIZE	ELEV	TYPE	MATERIAL	FINISH	RATING	MATERIAL	ELEV	RATING	HARDWARE SET	REMARKS
TYPICAL APARTMENT UNIT												
U1	UNIT ENTRANCE	3'-0" x 6'-8" x 1 3/4"	B	FLUSH	WOOD	PAINT	1/3 HR	WOOD	2		3	
U2	BEDROOM	3'-0" x 6'-8" x 1 3/4"	B	FLUSH	WOOD	PAINT	N/A	WOOD	2		3	
U3	BATHROOM	3'-0" x 6'-8" x 1 3/4"	B	FLUSH	WOOD	PAINT	N/A	WOOD	2			
U4.0	CLOSET	(2) 2'-6" x 6'-8" x 1 3/4"	D	BIFOLD	WOOD	PAINT	N/A	WOOD	2			
U4.1	CLOSET	1'-6" x 6'-8" x 1 3/4"	D	BIFOLD	WOOD	PAINT	N/A	WOOD	2			
U4.2	CLOSET	2'-0" x 6'-8" x 1 3/4"	D	BIFOLD	WOOD	PAINT	N/A	WOOD	2			
U4.3	CLOSET	3'-0" x 6'-8" x 1 3/4"	D	BIFOLD	WOOD	PAINT	N/A	WOOD	2			
U4.4	CLOSET	(2) 2'-0" x 6'-8" x 1 3/4"	D	BIFOLD	WOOD	PAINT	N/A	WOOD	2			
U4.5	CLOSET	(2) 4'-4" x 6'-8" x 1 3/4"	D	BIFOLD	WOOD	PAINT	N/A	WOOD	2			
U5	LAUNDRY	3'-0" x 6'-8" x 1 3/4"	E	FLUSH	WOOD	PAINT	N/A	WOOD	2			
U6	MECHANICAL	3'-0" x 6'-8" x 1 3/4"	C	FLUSH	HM	PAINT	1/3 HR	HM	1			
BUILDING CIRCULATION												
C1	STAIR	3'-0" x 8'-0" x 1 3/4"	A	FLUSH	ALUM. 4 GLASS		N/A	ALUM.	3		1	LANDLORD TO PROVIDE INTERCOM/ACCESS SYSTEM
C2	STAIR	3'-0" x 8'-0" x 1 3/4"	C	FLUSH	HM	PAINT	1-1/2 HR	HM	1		2	
C3	WATER ROOM	3'-0" x 8'-0" x 1 3/4"	C	FLUSH	HM	PAINT	N/A	HM	1		3	

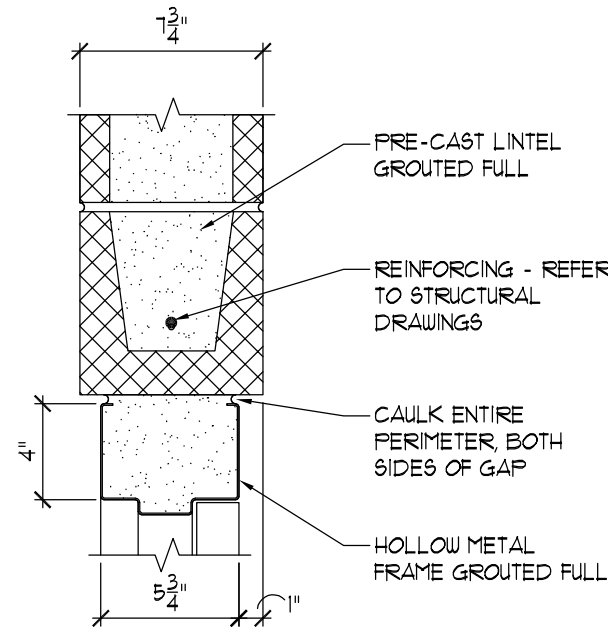
NOTES:  
1. DOORS 4 HARDWARE TO COMPLY WITH GENERAL NOTES ON SHEET A402.  
2. ALL DOORS AND HARDWARE TO BE SELECTED & VERIFIED BY THE TENANT & OWNER.  
3. FOR DOOR HARDWARE, CONTACT KEITH BROWN AT ALLEGION, PLC. (PH: 734-456-5324)



## 1 DOOR AND FRAME ELEVATIONS

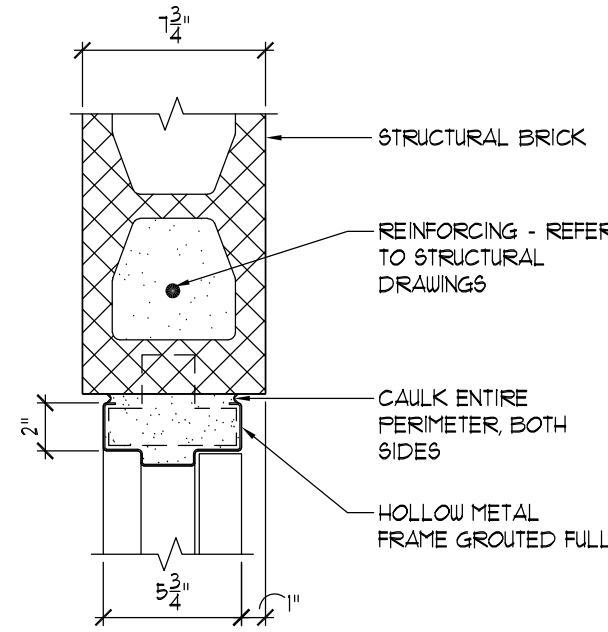


## 2 WINDOW ELEVATIONS



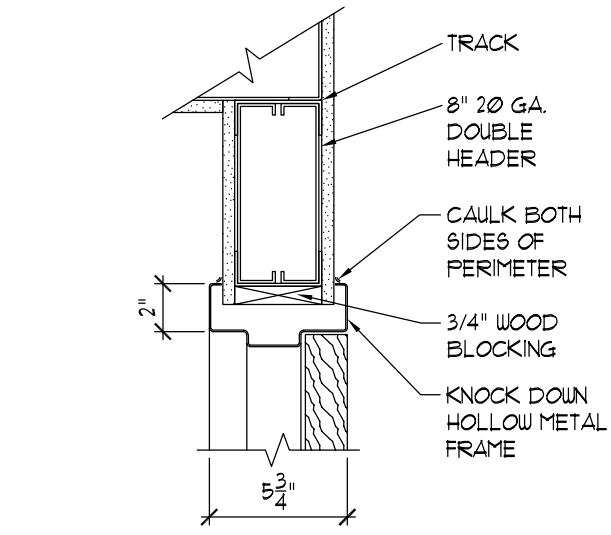
## 2 DOOR HEAD DETAIL

SCALE: 1 1/2" = 1'-0"



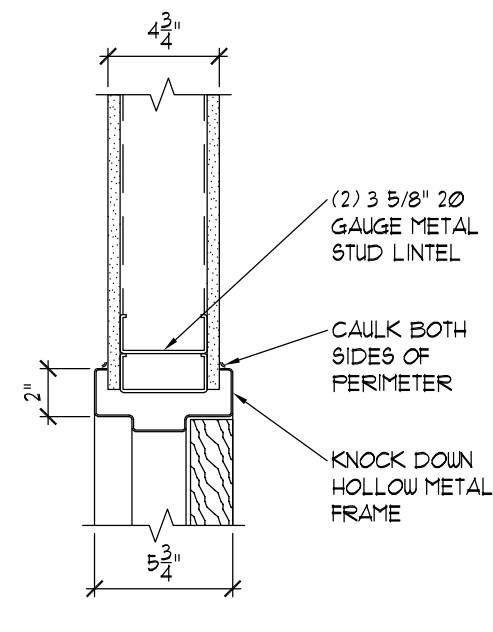
## 4 DOOR JAMB DETAIL

SCALE: 1 1/2" = 1'-0"



## 3 DOOR HEAD DETAIL

SCALE: 1 1/2" = 1'-0"



## 5 DOOR JAMB DETAIL

SCALE: 1 1/2" = 1'-0"

HARDWARE SETS  
CONTACT KEITH BROWN AT ALLEGION, PLC. (PH: 734-456-5324)

HARDWARE SET #1  
DOOR NUMBER:  
C1

EACH TO HAVE:  
1 EA CONTINUOUS HINGE  
1 EA SURFACE CLOSER  
1 SET SEAL

112HD  
SC11 RW/PA  
WEATHER SEALS BY  
DOOR/FRAME MANUFACTURER

628 IVE  
689 FAL  
UNI

1 EA DOOR SWEEP  
1 EA THRESHOLD  
1 EA PANIC HARDWARE  
1 EA STOREROOM LOCK

C62T  
425  
1381P6 DANE

AL NGP  
MIL NGP  
626 NGP  
626 FAL

HARDWARE SET #2  
DOOR NUMBER:  
C2

EACH TO HAVE:

3 EA HINGE  
1 EA WALL STOP  
1 EA SURFACE CLOSER  
1 EA PASSAGE SET

58B1 45 X 45  
US40TCCV  
SC11 RW/PA  
T105 DANE

652 IVE  
626 IVE  
689 FAL 1 EA  
626 FAL

HARDWARE SET #3  
DOOR NUMBER:  
U1

EACH TO HAVE:

3 EA HINGE  
1 EA ENTRY/OFFICE LOCK  
1 EA WALL STOP

58B1 45 X 45  
131P6 D  
US406/40TCCV

652 IVE  
626 FAL  
630 IVE

ADDRESS:  
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ISSUANCES

NO	DESCRIPTION	DATE
1	REVIEW SET	12/23/21

SHEET TITLE  
DOOR AND WINDOW  
SCHEDULES

DWG. NO.

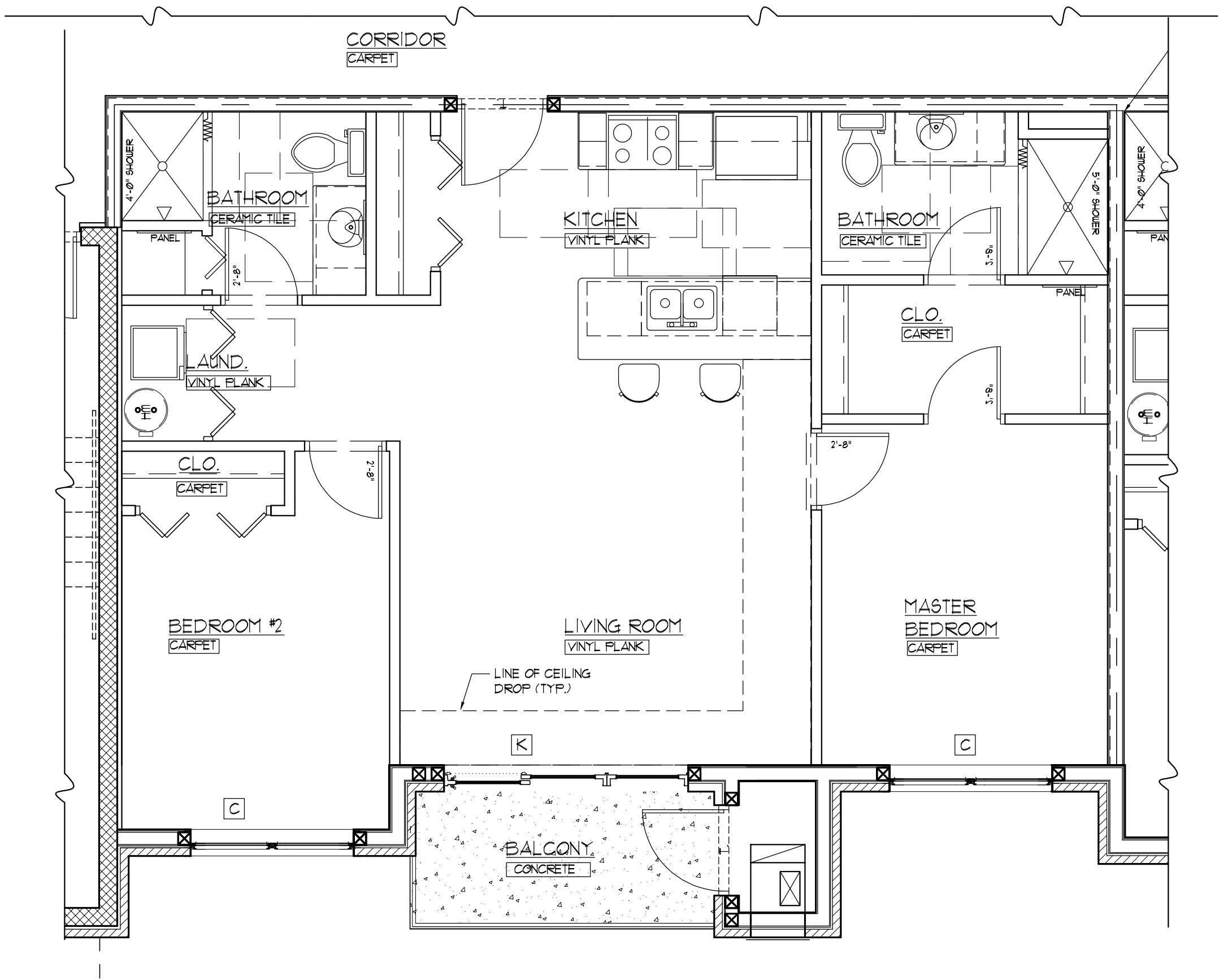
A4.0.2



ROOM FINISH SCHEDULE										
LOCATION	FLOOR		BASE		WALL		CEILING		HEIGHT	REMARKS
	MAT'L	FIN.	MAT'L	FIN.	MAT'L	FIN.	MAT'L	FIN.		
TYPICAL APARTMENT UNIT										
KITCHEN	VNYL PLANK	PRE-FIN	VNYL BASE	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	10'-0" / 11'-0"	
LIVING ROOM	VNYL PLANK	PRE-FIN	VNYL BASE	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	10'-0" / 11'-0"	
MASTER BEDROOM	CARPET	PRE-FIN	VNYL BASE	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	10'-0" / 11'-0"	
BEDROOM	CARPET	PRE-FIN	VNYL BASE	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	10'-0" / 11'-0"	
CLOSET	CARPET	PRE-FIN	VNYL BASE	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	10'-0" / 11'-0"	
BATHROOM	CERAMIC TILE	PRE-FIN	CERAMIC TILE	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	10'-0" / 11'-0"	
BALCONY	RUBBER VNYL	PRE-FIN	RUBBER VNYL	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	10'-0" / 11'-0"	
LAUNDRY	VNYL PLANK	PRE-FIN	VNYL BASE	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	10'-0" / 11'-0"	
BUILDING CIRCULATION										
STAIR	WOOD	PAINTED	VNYL BASE	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	VARIES SEE SECTIONS	
WATER ROOM	CONCRETE	PRE-FIN	VNYL BASE	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	10'-0" '	
CORRIDOR	CARPET	PRE-FIN	VNYL BASE	PRE-FIN	DRYWALL	PAINTED	DRYWALL	PAINTED	10'-0" / 11'-0"	

NOTE:  
1. FINISHES TO COMPLY WITH TYPICAL NOTES 2 4 3 ON SHEET A403  
2. VERIFY FINISH SCHEDULE WITH TENANT / OWNER

- TYPICAL NOTES:
- HARDWARE SELECTED BY OWNER
  - ALL INTERIOR FINISH AND TRIM SHALL COMPLY W/ LOCAL ORDINANCES, CURRENT 2015 MICHIGAN BUILDING CODE SECTION CHAPTER 8
  - CLASS C, FLAME SPREAD 76-200, SMOKE DEVELOPMENT 0-450. CONTRACTOR TO SUBMIT DOC'S AS REQUIRED.  
  
PRIOR TO INSTALLATION OF ANY PROPOSED APPLICABLE INTERIOR WALL AND CEILING FINISHES, PROVIDE TO THE CITY'S FIELD INSPECTOR DOCUMENTATION SHOWING THEIR CLASS, FLAME SPREAD AND SMOKE DEVELOPED INDEXES.
  - INSULATION FLAME SPREAD INDEX REQUIREMENTS SHALL BE IN ACCORDANCE WITH ASTM E 84.  
  
A. CONCEALED OR EXPOSED INSTALLATION SHALL HAVE RATING OF NOT MORE THAN 25. INSULATION BETWEEN 2 LAYERS OF NONCOMBUSTIBLE MATERIALS WHO INTERVENING AIRSPACE SHALL BE ALLOWED TO HAVE A FLAME SPREAD INDEX OF NOT MORE THEN 100.  
  
B. SMOKE DEVELOPMENT INDEX RATING OF NOT MORE THAN 450.  
C. ALL INSULATION TO BE PROPERLY LABELED
  - CONTRACTOR TO PROVIDE FIRE EXTINGUISHER ON JOB AS REQUIRED BY BUILDING INSPECTOR
  - PROVIDE MIN. (2) 5# ABC EXTINGUISHERS IN ACCORDANCE WITH NFPA 10 IN EACH TENANT SPACE. LOCATION TO BE VERIFIED WITH BUILDING INSPECTOR
  - PROVIDE INTERNATIONAL SYMBOL FOR HANDICAPPED SIGNS FOR DIRECTION ON RESTROOM ACCESSIBILITY.
  - ALL GLAZING IN HAZARDOUS AREA SHALL BE SAFETY GLASS AND COMPLY WITH CURRENT M.B.C. SEC 2406.2 LABELS AND GLASS COMP. WITH CPSC 16CFR PART 1201.



1  
A403  
TYPICAL UNIT FINISH PLAN  
SCALE: 1/4" = 1'-0"

**SMA**  
Serra Marko Associates  
**Architects**  
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PROJECT NAME:  
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BUILDING# 5

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JOB NO. 15-0353

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ISSUANCES

NO	DESCRIPTION	DATE
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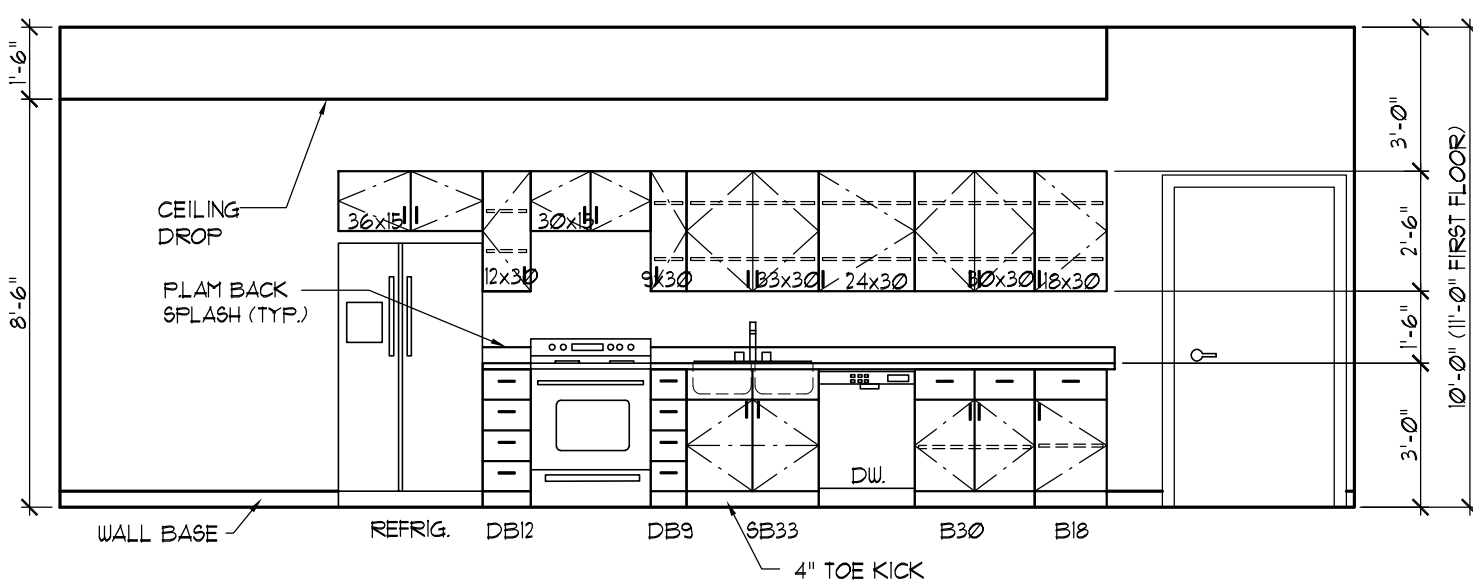
SHEET TITLE  
GENERAL NOTES  
AND FINISHED  
SCHEDULE

DWG. NO.

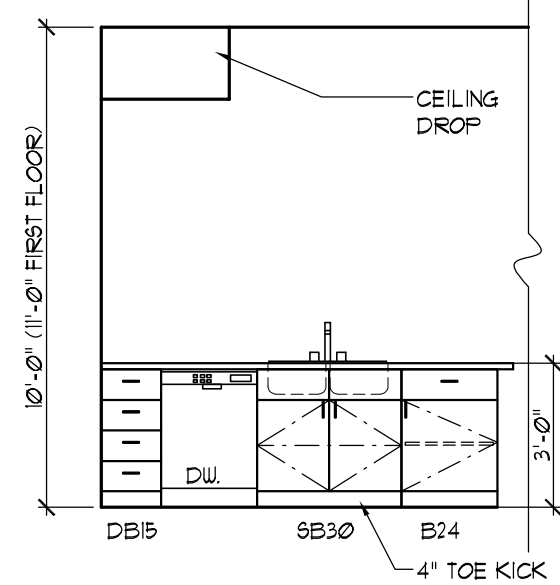
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of

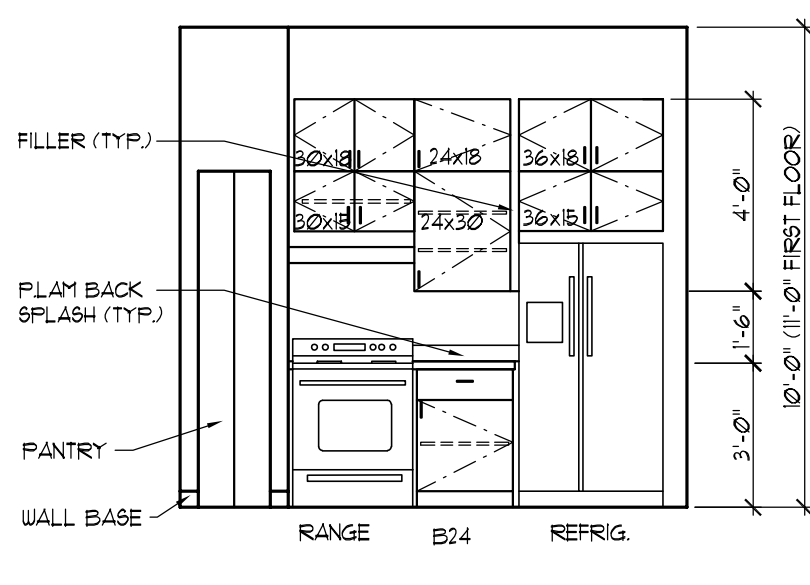




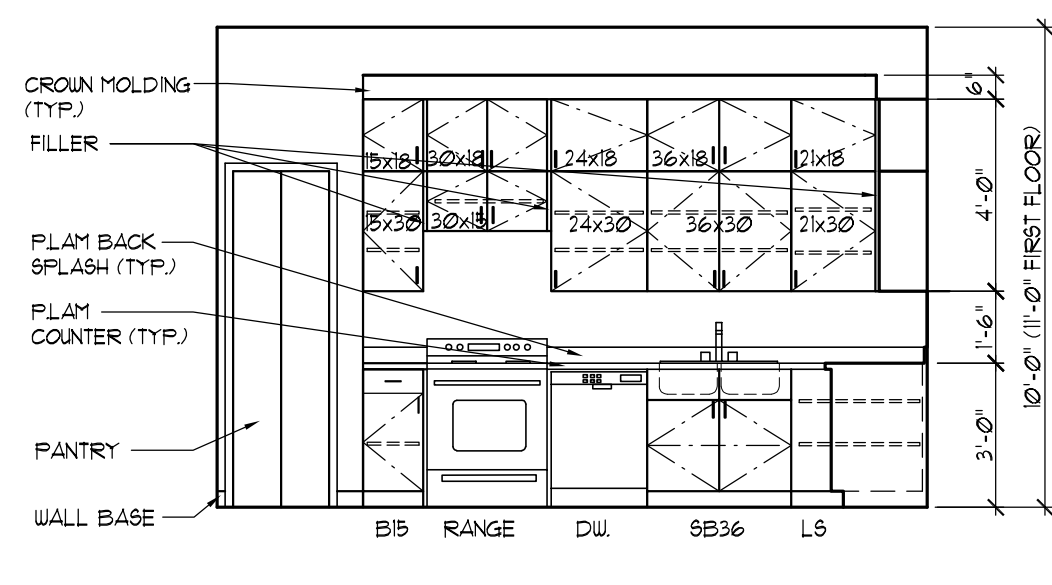
1 KITCHEN ELEVATION  
A501 SCALE: 1/4" = 1'-0"



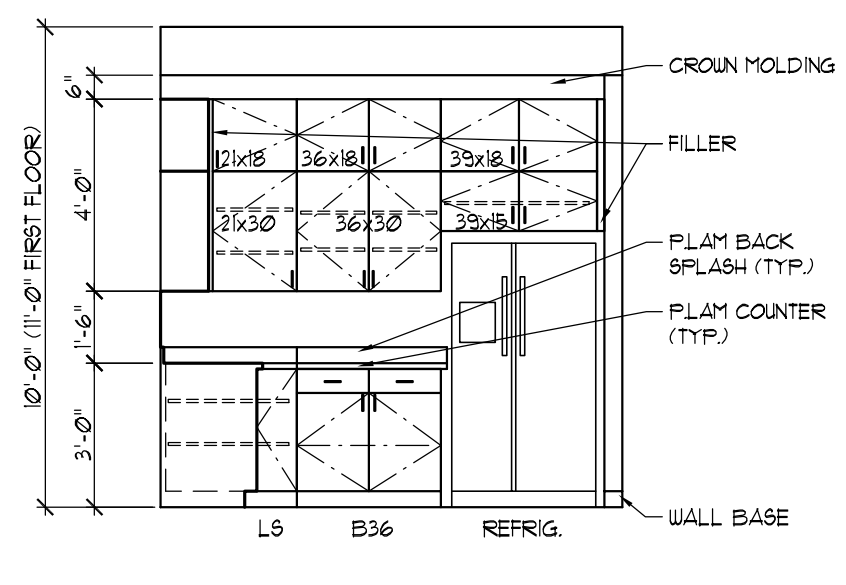
2 KITCHEN ELEVATION  
A501 SCALE: 1/4" = 1'-0"



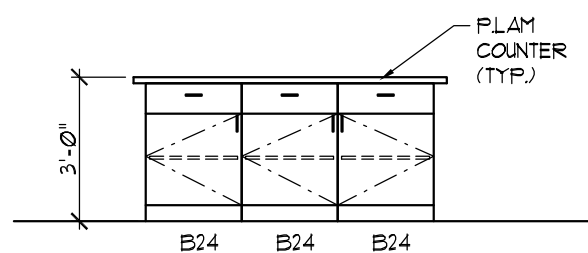
3 KITCHEN ELEVATION  
A501 SCALE: 1/4" = 1'-0"



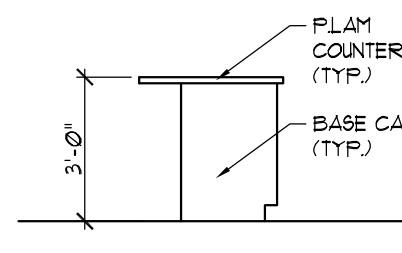
4 KITCHEN ELEVATION  
A501 SCALE: 1/4" = 1'-0"



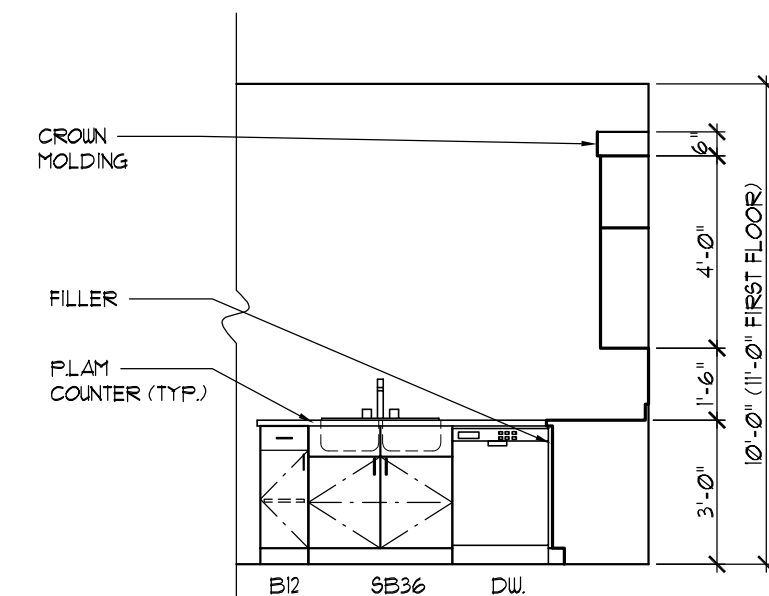
5 KITCHEN ELEVATION  
A501 SCALE: 1/4" = 1'-0"



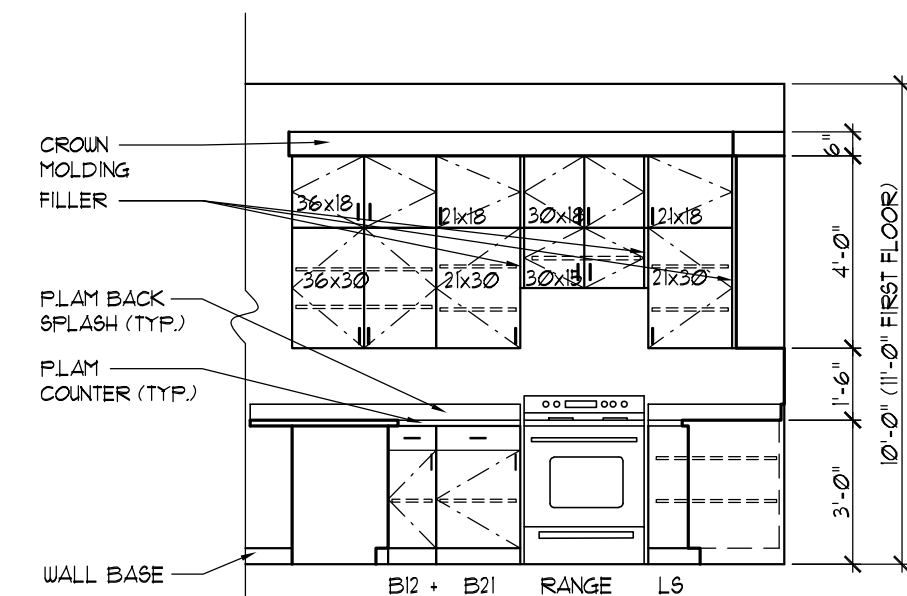
6 KITCHEN ISLAND ELEVATION  
A501 SCALE: 1/4" = 1'-0"



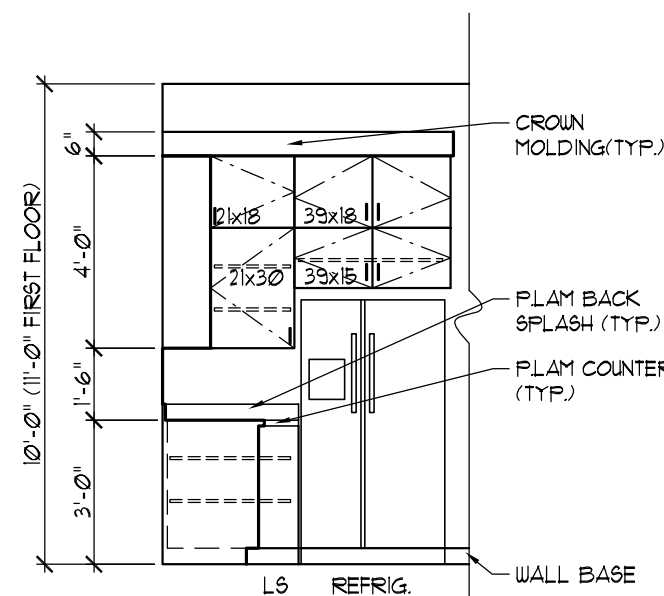
7 KITCHEN ISLAND ELEVATION  
A501 SCALE: 1/4" = 1'-0"



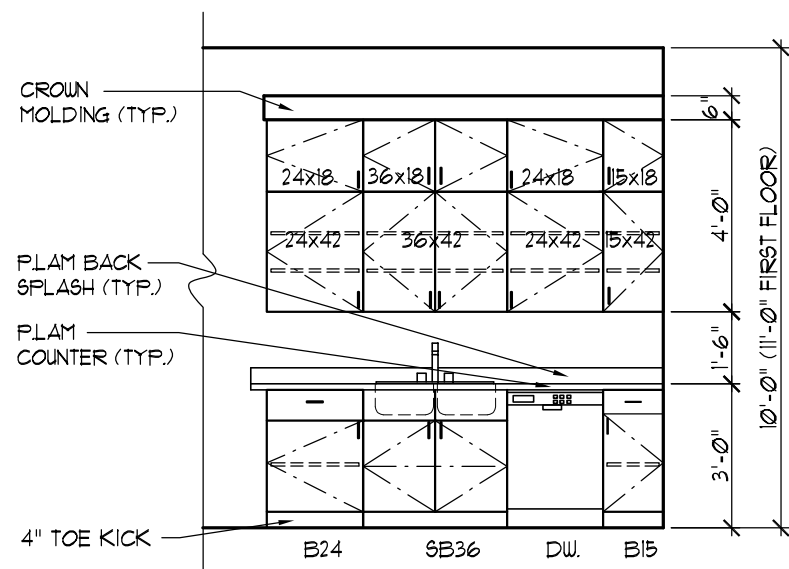
8 KITCHEN ELEVATION  
A501 SCALE: 1/4" = 1'-0"



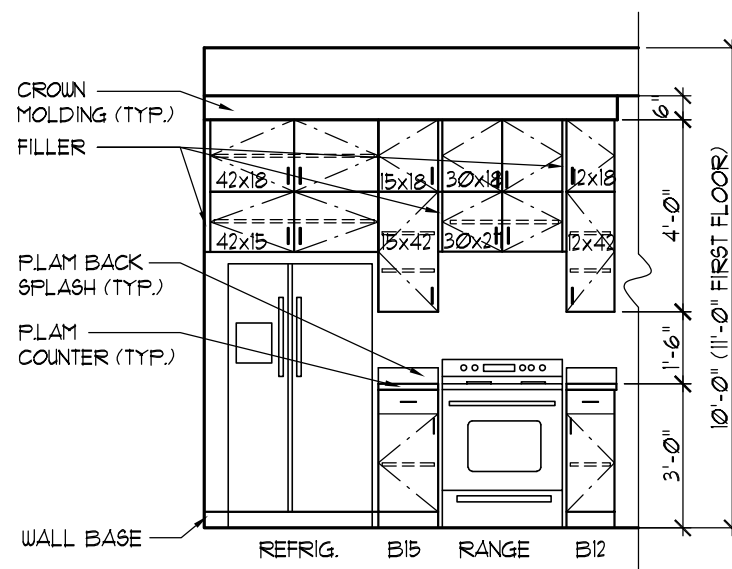
9 KITCHEN ELEVATION  
A501 SCALE: 1/4" = 1'-0"



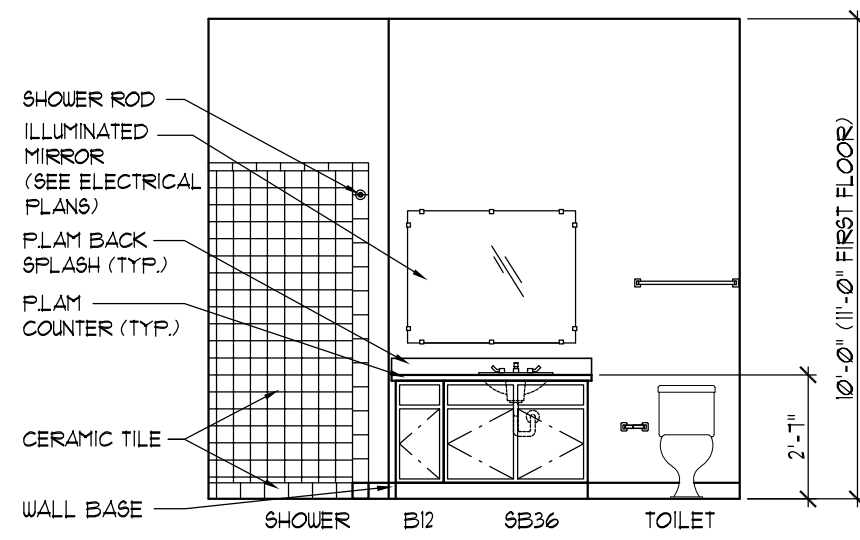
10 KITCHEN ELEVATION  
A501 SCALE: 1/4" = 1'-0"



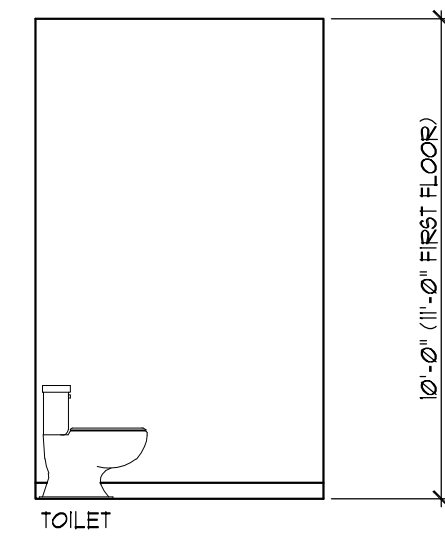
11 KITCHEN ELEVATION  
A501 SCALE: 1/4" = 1'-0"



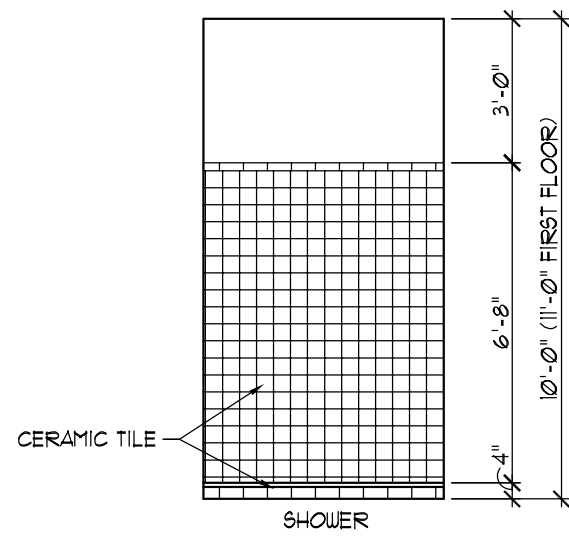
12 KITCHEN ELEVATION  
A501 SCALE: 1/4" = 1'-0"



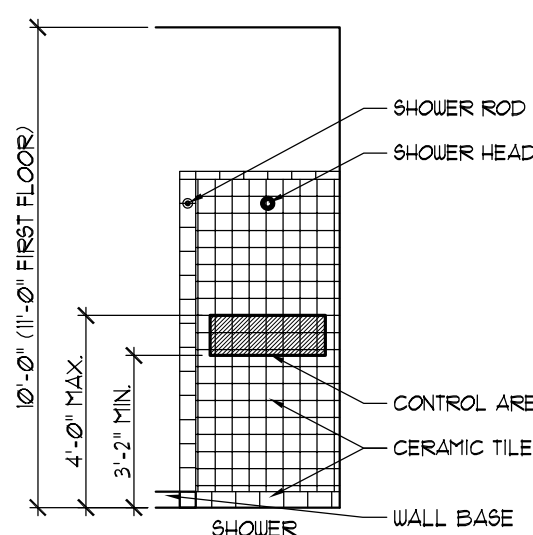
13 BATHROOM ELEVATION  
A501 SCALE: 1/4" = 1'-0"



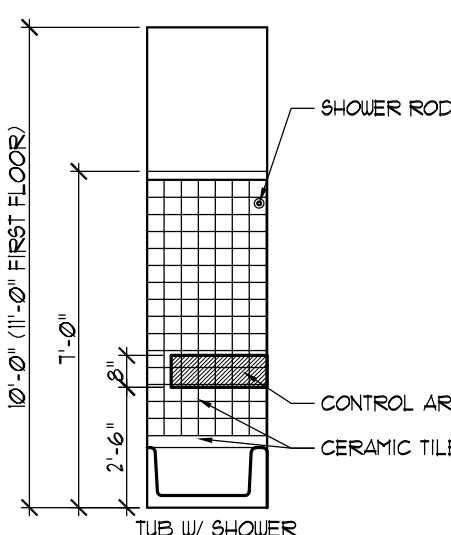
14 BATHROOM ELEVATION  
A501 SCALE: 1/4" = 1'-0"



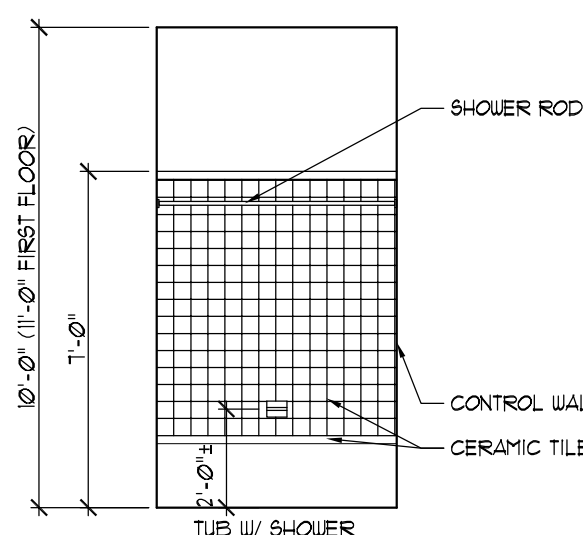
15 BATHROOM ELEVATION  
A501 SCALE: 1/4" = 1'-0"



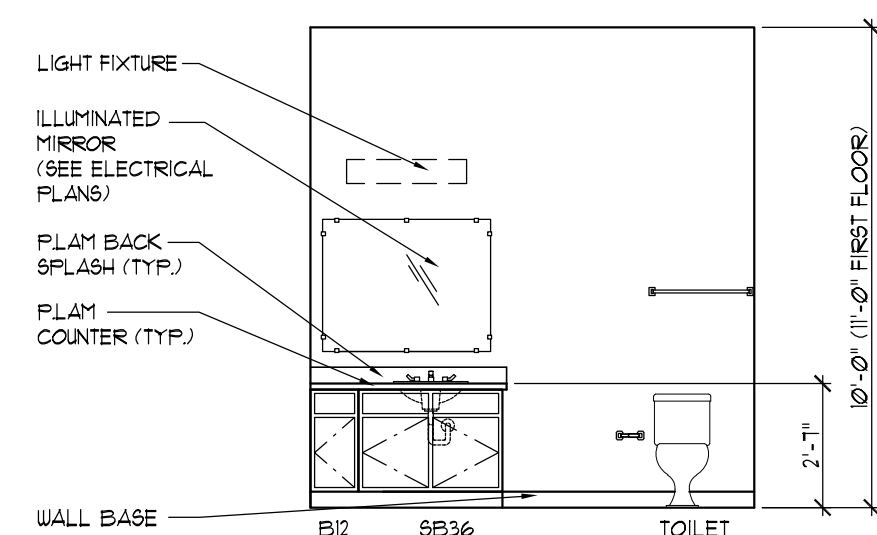
16 BATHROOM ELEVATION  
A501 SCALE: 1/4" = 1'-0"



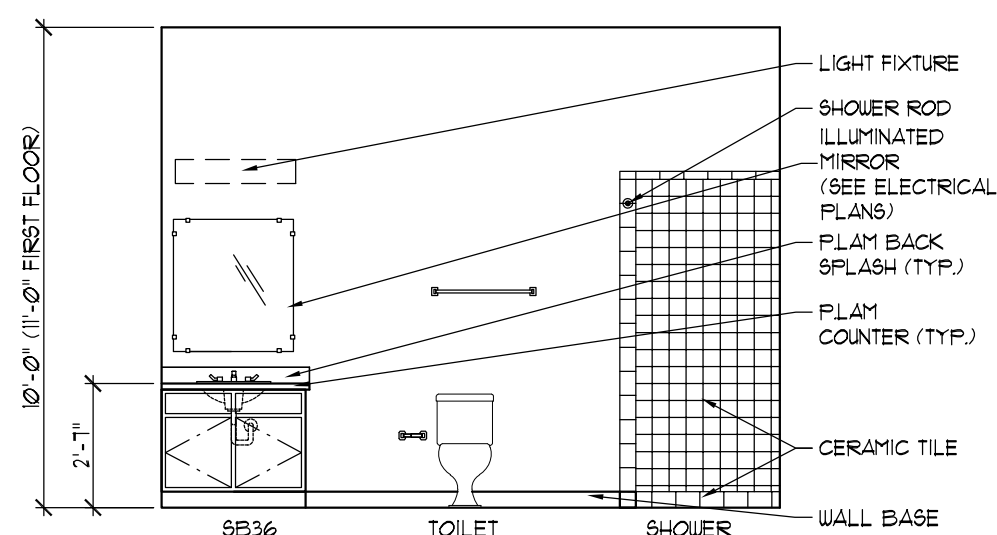
17 BATHROOM ELEVATION  
A501 SCALE: 1/4" = 1'-0"



18 BATHROOM ELEVATION  
A501 SCALE: 1/4" = 1'-0"



19 BATHROOM ELEVATION  
A501 SCALE: 1/4" = 1'-0"



20 BATHROOM ELEVATION  
A501 SCALE: 1/4" = 1'-0"

PROJECT NAME:  
TROY CROSSING  
APARTMENTS  
BUILDING# 5

REVIEW SET  
12-23-2021

ADDRESS:  
XXXX BIG BEAVER RD.  
TROY, MI 48083

ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATION OF ALL DIMENSIONS.

JOB NO.	15-0353
D.B./C.B	R.A./P.D
ISSUANCES	
NO	DESCRIPTION
1	REVIEW SET
DATE	12/23/21

SHEET TITLE  
INTERIOR  
ELEVATIONS



STRUCTURAL STEEL:

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH 13TH EDITION OF AISC SPECIFICATIONS.
2. STEEL DETAILING, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS FOR "STRUCTURAL STEEL BUILDINGS".
3. ALL STRUCTURAL STEEL SHALL CONFORM TO THE LATEST ASTM SPECIFICATIONS ACCORDING TO THE FOLLOWING SERIAL DESIGNATIONS BY SHAPE:
- WIDE FLANGES AND TEES: A992 OR ASTM A572, Fy = 50 KSI
  - ANGLES, CHANNELS, BARS AND PLATES: A36
  - SQUARE OR RECTANGULAR HOLLOW STRUCTURAL SHAPES OR TUBES: ASTM A500, GR. B, Fy = 46 KSI
  - ROUND HOLLOW STRUCTURAL SHAPES OR PIPES: ASTM A53; GRADE B, Fy = 35 KSI
4. ALL WELDED CONNECTIONS SHALL CONFORM TO THE LATEST AWS CODE, USING E70XX ELECTRODES, WITH WELDING PERFORMED BY QUALIFIED WELDERS.
5. ALL FIELD CONNECTIONS SHALL BE MADE WITH 3/4" MIN. DIAMETER ASTM A325 BEARING TYPE BOLTS (WITH THREADS ASSUMED IN THE SHEAR PLANE) UNLESS OTHERWISE NOTED.
6. ALL TUBE AND PIPE COLUMN CONNECTIONS TO BE THRU PLATE TYPE WITH 3/8" MINIMUM THICKNESS OR DOUBLE ANGLES.
7. PROVIDE 7"x7"x3/8" BEARING PLATE WELDED TO STEEL BEAM W/ (2) 1/2" Q" X 6" LONG STUDS @ BEARING ON CMU WALLS.
8. THE DESIGN, CONFIGURATION, ERECTION SAFETY AND SEQUENCING OF ALL STRUCTURAL STEEL CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE STRUCTURAL STEEL FABRICATOR. REVIEW AND ACCEPTANCE OF THE SHOP DRAWINGS BY THE ENGINEER SHALL CONSTITUTE APPROVAL OF THE LOAD CARRYING ADEQUACY ONLY.
9. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL ANGLES, PLATES, BARS, CLIPS, ETC., ATTACHED TO STRUCTURAL STEEL. VERIFY EXACT SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS WITH CONTRACTOR INVOLVED.
10. DO NO CUTTING, DRILLING OR MODIFYING OF STRUCTURAL MEMBERS WITHOUT THE APPROVAL OF THE ARCHITECT.

LUMBER

1. ALL LUMBER WORK SHALL BE IN ACCORDANCE TO 2015 NATIONAL DESIGN SPECIFICATION (NDS) AND 2015 MICHIGAN BUILDING CODE.
2. ALL 2X WOOD STUDS, JOISTS, AND POSTS SHALL BE SOUTHERN PINE, No. 2 (OR BETTER) AND KILN-RIED WITH THE FOLLOWING MINIMUM PROPERTIES:
- a. F = 750 PSI
  - b. FV = 175 PSI
  - c. FC || = 1,250 PSI
  - d. E = 1,400,000 PSI
3. RAFTERS, JOISTS AND HEADERS SHALL BEAR ON A MINIMUM OF 3 1/2" WIDTH.
4. ALL METAL CONNECTIONS SHALL BE SIMPSON STRONG TIE.
5. ALL FASTENING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF SECTION 2304.9.1. THROUGH 2304.9.7.
6. BUILT-UP HEADERS SHALL BE ATTACHED WITH CONSTRUCTION GLUE AND GRK SCREWS AT 10" O.C. STAGGERED TOP + BOTTOM. HEADERS SHALL HAVE THE FOLLOWING CONSTRUCTION ( REFER TO PLAN FOR HEADER DEPTHS):
- A. 2X4 WALL: (2) 2x10 (MIN.) + 1/2" PLYWOOD (3 1/2" TOTAL WIDTH)
  - B. 2X6 WALL: (3) 2x10 (MIN.) + (2) 1/2" PLYWOOD (5 1/2" TOTAL WIDTH)
  - C. 2X8 WALL: (4) 2x10 (MIN.) + (3) 3/8" PLYWOOD (7 1/8" TOTAL WIDTH)
7. MULTI-PLY BUILT-UP WOOD OR LVL BEAMS SHALL BE ATTACHED FOR FULL LAMINATION USING CONSTRUCTION GLUE AND GRK SCREWS AT 10" O.C. STAGGERED TOP AND BOTTOM BETWEEN EACH ADJACENT PAIR OF PLIES.
8. WHERE FLOOR JOISTS ARE PARALLEL WITH BEARING, PROVIDE 2X SOLID BLOCKING AT 16" O.C. AT FIRST BAY (LADDER BLOCKING).
9. ALL HEADERS SHALL HAVE A MINIMUM (2) 2X JACK STUDS AT BEARING ENDS (REFER TO PLANS). PROVIDE MINIMUM (2) 2X KING STUDS AT BEARING ENDS.
10. POINT LOAD ABOVE (PLA) AS SHOWN ON PLAN MUST BE SUPPORTED WITH AT LEAST (2) 2X STUDS WITHIN THE 2X WALL. ALL POINT LOADS ABOVE MUST BE SUPPORTED WITH A HEADER, BEAM OR MULTIPLE STUDS.
11. BALLOON FRAMING STUDS SHALL BE 2X6 MINIMUM. PROVIDE (2) 2X JACK STUDS AT BEARING ENDS AND (2) KING STUDS MINIMUM.
12. ALL TJI RAFTERS AND JOISTS SHALL BE BY TRUS JOIST. REFER TO INSTALLATION RECOMMENDATIONS FROM TRUS JOIST FOR TYPICAL FRAMING DETAILS.
13. ENGINEERED LUMBER BY TRUS JOIST SHALL INCLUDE LAMINATED VENEER LUMBER (LVL), PARALLEL STRAND LUMBER (PSL) AND LAMINATED STRAND LUMBER (LSL) WITH THE FOLLOWING PROPERTIES:
- G. LVL:
- a. E = 1,900,000 PSI
  - b. WIDTH: 1 1/2"
  - c. DEPTHS: 5 1/2", 7 1/4", 9 1/4", 9 1/2", 11 1/4", 11 7/8", 14", 16", 18" AND 20"
- B. PSL:
- a. E = 2,000,000 PSI
  - b. WIDTHS: 3 1/2", 5 1/4" AND 7"
  - c. DEPTHS: 9 1/4", 9 1/2", 11 1/4", 11 7/8", 14", 16" AND 18"
- C. LSL:
- a. E = 1,550,000 PSI
  - b. WIDTHS: 1 1/2" AND 3 1/2"
  - c. DEPTHS: 9 1/4", 9 1/2", 11 1/4", 11 7/8", 14" AND 16"
14. DO NOT DRILL HOLES, NOTCH OR CUT EXISTING LUMBER FRAMING WITHOUT CONSULTING THE ARCHITECT OR ENGINEER OF RECORD.
15. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY SHORING BEFORE AND DURING LUMBER FRAMING INSTALLATION.
16. ROOF SHEATHING SHALL BE 5/8" APA RATED TONGUE AND GROOVE PLYWOOD. ATTACHED TO WOOD FRAMING WITH CONSTRUCTION GLUE AND 8d NAILING @ 6" O.C. EDGE AND 12" O.C. FIELD NAILING.
17. EXTERIOR WALL SHEATHING SHALL BE 7/16" APA RATED OSB. ATTACH TO WOOD FRAMING WITH 8d @ 6" O.C. EDGE AND 12" O.C. FIELD NAILING. REFER TO SHEAR WALL FRAMING FOR SHEAR WALL NAILING IF REQUIRED.
18. FLOOR SHEATHING SHALL BE 23/32" APA RATED TONGUE AND GROOVE PLYWOOD. ATTACH TO WOOD FRAMING WITH CONSTRUCTION GLUE AND 2" #8 WOOD SCREWS (OR 8d NAIL) AT 6" O.C. EDGE AND 12" O.C. FIELD NAILING.

FOUNDATIONS:

EXCAVATIONS

1. FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL OR ENGINEERED FILL WITH AN ASSUMED SAFE BEARING CAPACITY OF 2000 PSF. IF SOIL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATIONS INDICATED, FOOTINGS SHALL BE ENLARGED OR LOWERED AT THE DIRECTION OF THE ARCHITECT. ALLOWABLE SOIL BEARING PRESSURE SHALL BE CONFIRMED IN THE FIELD BY A QUALIFIED SOILS ENGINEER.
2. UNLESS OTHERWISE NOTED OR DETAILED, ALL FOUNDATIONS SHALL BE LOCATED SUCH THAT THE CENTERLINE OF FOOTING IS ALSO THE CENTERLINE OF COLUMN.
3. BOTTOM OF ALL EXTERIOR FOOTINGS MUST BE 3'-6" MIN. BELOW GRADE.
4. COORDINATE ALL EMBEDDED ITEMS, SLEEVES THRU-FOOTING, OPENINGS AND ELECTRICAL CONDUITS WITH MECHANICAL, CIVIL, STRUCTURAL AND ARCHITECTURAL DRAWINGS PRIOR TO PLACEMENT OF CONCRETE.
5. PROVIDE NECESSARY SHEETING, SHORING, FORMING OR BRACING, ETC., DURING EXCAVATION AS REQUIRED TO PROTECT SIDES OF EXCAVATIONS OR AS REQUIRED TO COMPLY WITH SAFETY REGULATIONS. DO NOT BACKFILL BEHIND BASEMENT WALLS UNTIL FLOOR FRAMING OR TEMPORARY BRACING IS IN PLACE.
6. REFER TO THE PROJECT GEOTECHNICAL REPORT FOR UNDERCUTTING OF EXISTING POOR QUALITY FILL AND BURIED TOPSOIL WHICH MUST BE REMOVED FROM WITHIN THE AREA OF THE BUILDING ADDITION INCLUDING 10 FEET BEYOND THE BUILDING ADDITION FOOTPRINT. PROVIDE ENGINEERED BACKFILL TO THE UNDERSIDE OF THE NEW FLOOR SLAB. REFER TO PROJECT GEOTECHNICAL REPORT FOR UNACCEPTABLE FILL DISPOSAL GUIDELINES.
7. PREPARATION OF THE SITE, BUILDING FOOTPRINT AND SLAB SUB-BASE SHALL PROCEED IN COMPLIANCE WITH THE LOCAL CODES AND THE PROJECT SOILS REPORT IDENTIFIED ABOVE. UNLESS OTHERWISE NOTED OR SPECIFIED, ALL FILL UNDER FLOOR SLABS AND BEHIND FOUNDATION WALLS SHALL BE COMPACTED WITH VIBRATORS, COMPACTORS, ETC. TO 95% MAXIMUM DENSITY (MODIFIED PROCTOR) AT OPTIMUM MOISTURE CONTENT.
8. THIS TRADE SHALL PROVIDE PUMPS, WELL POINTS, OR OTHER SYSTEMS AS REQUIRED BY THE CONDITIONS IDENTIFIED IN THE PROJECT SOILS REPORT. PUMPS SHALL BE OPERATED AS REQUIRED TO ACCOMPLISH THE ABOVE, ON A 24-HOUR BASIS, IF NECESSARY. UNDER NO CONDITIONS SHALL WATER BE ALLOWED TO WASH OVER FRESHLY PLACED CONCRETE.

CONCRETE:

1. HE CONCRETE PORTIONS OF THIS STRUCTURE ARE DESIGNED ACCORDING TO THE LATEST ULTIMATE STRENGTH DESIGN PROVISIONS OF THE AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY (ACI 318) INCLUDING SECTIONS 1902 THRU 1907 OF CHAPTER 19 IN THE MICHIGAN BUILDING CODE. CONCRETE COMPONENTS HAVE BEEN DESIGNED ACCORDING TO THE PROVISIONS FOR SEISMIC DESIGN CATEGORY B.
2. ALL CONCRETE SHALL BE NORMAL WEIGHT (150 PCF). MINIMUM CONCRETE STRENGTH SHALL BE f'c = 3000 PSI MIN. AT 28 DAYS, UNLESS NOTED OTHERWISE; SUPPORTED SLABS AND SLABS ON GRADE SHALL BE f'c = 3000 PSI MIN. UNLESS NOTED OTHERWISE, PROVIDE f'c = 4000 PSI WITH 6% +1% ENTRAINED AIR WHERE CONCRETE IS EXPOSED TO EXTERIOR ATMOSPHERE OR WEATHER.
3. ALL CONCRETE SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C150. AGGREGATE SHALL CONFORM TO ASTM C33.
4. CONCRETE ADMXTURES SHALL BE USED TO FACILITATE CONCRETE PLACEMENT, AID DIFFICULT PLACING CONDITIONS OR ASSIST IN ATTAINING SPECIFIED CONCRETE QUALITIES. ADMXTURES SHALL HAVE LESS THAN 0.05 CHLORIDE IONS.
- AIR ENTRAINMENT PER ASTM C260
  - WATER REDUCER PER ASTM C494, TYPE A
  - WATER REDUCER / ACCELERATOR PER ASTM C494, TYPE C OR E
  - WATER REDUCER / RETARDER PER ASTM C494, TYPE B OR D
  - SUPERPLASTICIZER PER ASTM C494, TYPE F OR G
5. CONCRETE MIXES SHALL BE PROPORTIONED PER SECTION 3.9 OF ACI-301. CERTIFIED HISTORICAL TEST DATA SHALL SERVE AS A BASIS FOR EACH MIX DESIGN. WHERE HISTORICAL TEST DATA IS NON-EXISTENT THE FOLLOWING GUIDELINES SHALL APPLY
- | TYPE                    | COMPRESSIVE STRENGTH, f'c (28 DAYS, PSI) | CEMENT CONTENT (LBS./C.Y.) | WATER/CEMENT RATIO (BY WEIGHT) |
|-------------------------|--|----------------------------|--------------------------------|
| STANDARD, NORMAL WT.    | 3000 MIN                                 | 470 MIN                    | 0.55 MAX                       |
| STANDARD, NORMAL WT.    | 3500 MIN                                 | 517 MIN                    | 0.50 MAX                       |
| AIR ENTRAINED, NORM WT. | 4000 MIN                                 | 564 MIN                    | 0.45 MAX                       |
6. ALL CONCRETE WORK AND PLACEMENT SHALL CONFORM TO THE LATEST ACI STANDARDS AND RECOMMENDATIONS. FREE FALL SHALL NOT EXCEED 10 FEET FOR ALL CONCRETE CONTAINING HIGH-RANGE WATER REDUCER (SUPERPLASTICIZER) AND 5 FEET FOR ALL OTHER CONCRETE. PROVIDE ELEPHANT TRUNK, TREMIES OR OTHER PLACING EQUIPMENT OR OPENINGS IN SIDES OF FORMS AS REQUIRED TO LIMIT FREE FALL.
7. ALL REINFORCING BARS, DOWELS AND TIES SHALL CONFORM TO ASTM A615, GRADE 60. ALL REINFORCING STEEL SHALL BE CONTINUOUS AND SHALL HAVE 36 BAR DIAMETER LAP (MIN.) AND SHALL BE FABRICATED AND PLACED IN ACCORDANCE WITH ACI 315 AND ACI 318, LATEST EDITION. HOOK ALL BEAM BARS AT DISCONTINUOUS ENDS.
8. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 FURNISHED IN FLAT MATS OR SHEETS, NOT IN ROLLS. PROVIDE MINIMUM 8" LAP BETWEEN SHEETS. ALL SLAB REINFORCING SHALL BE SUPPORTED ON SAND CHAIRS.
9. ALL COLUMN / PIER OR WALL DOWELS SHALL BE 48 DIAMETERS LONG USING THE SAME SIZE AND QUANTITY AS THE VERTICAL COLUMN / PIER OR WALL BARS. PROVIDE HOOKS AS REQUIRED FOR PLACEMENT.
10. ALL EXPOSED CONCRETE CORNERS AND EDGES SHALL BE CHAMFERED 3/4".
11. POURED CONCRETE WALLS SHALL BE VIBRATED IN 20" MAX. LIFTS DURING THE PLACEMENT OPERATION.
12. MINIMUM CONCRETE COVERS SHALL BE (UNLESS OTHERWISE NOTED):
- a. UNFORMED SURFACES IN CONTACT WITH GROUND (FOOTING BOTTOMS). 3"
  - b. SLABS ON GRADE (TOP COVER). 1"
  - c. FORMED SURFACES IN CONTACT WITH GROUND OR EXPOSED TO THE WEATHER (GRADE BEAMS, WALLS, ETC.) 2"
  - d. BEAMS AND COLUMN MAIN REINFORCING OR STIRRUPS AND TIES 1 1/2"
  - e. INTERIOR & EXTERIOR STRUCTURAL TIES 1"
  - f. INTERIOR WALL SURFACES 1"
  - g. IN ALL CASES, CLEARANCE NOT LESS THAN THE DIAMETER OF BARS.

- NOTE: MAXIMUM DEVIATION FROM THESE REQUIREMENTS SHALL BE +1/4" FOR SECTIONS TEN (10) INCHES OR LESS AND +1/2" FOR SECTIONS OVER TEN (10) INCHES THICK.

MATERIAL PROPERTIES FOR WOOD FRAMING:

1. ALL WOOD FRAMING SHALL BE USED AT 19% MAXIMUM MOISTURE CONTENT AND SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS (ALLOWABLE STRESSES ARE UNFACTORED AND ARE BASED ON THE 2018 NATIONAL DESIGN SPECIFICATION (NDS) PUBLISHED BY THE NATIONAL FOREST PRODUCTS' ASSOCIATION):

MEMBERS	MATERIALS	ALLOWABLE STRESSES
BEAM, HEADERS, JOISTS	#2 S.Y.P	
TOP PLATES & SILL PLATES OF LOAD BEARING WALL	S.P.F. NO.1/ NO.2	
WOOD COLUMNS	#2 S.Y.P. Fc = 1300 psi E = 1,200,000 psi	Fb = 475 psi
WALL STUD	STUD D.F.L. OR S.P.F. NO.1/ NO.2 E = 1,400,000 psi	Fb = 700 psi Fc = 850 psi
GLU-LAM BEAMS	S.P.F. NO.1/ NO.2 Fv = 290 psi E = 2,000,000 psi	Fb = 2,900 psi

2. SILL PLATES AND OTHER MEMBERS EXPOSED TO WEATHER OR IN CONTACT WITH CONCRETE MASONRY SHALL BE PRESSURE TREATED FOR MOISTURE RESISTANCE.

GENERAL NOTES:

GENERAL CONDITIONS

1. REFER TO ARCHITECTURAL DRAWINGS FOR OVERALL DIMENSIONS, LAYOUT, WALL HEIGHTS, FINISH FLOOR ELEVATIONS, GRADING AND OTHER TRADES.
2. IF ANY GENERAL NOTE CONFLICTS WITH ANY DETAIL OR NOTE ON THE PLANS OR IN THE SPECIFICATIONS, THE STRICTEST PROVISION SHALL GOVERN.
3. THE STRUCTURAL DRAWINGS ARE FOR THE PLACEMENT OF THE PROJECT STRUCTURAL COMPONENTS ONLY. REQUIREMENTS MADE BY OSHA, DNR, AND ALL APPLICABLE SAFETY CODES ARE TO BE DETERMINED AND PROVIDED BY THE CONTRACTOR.
4. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER IT IS FULLY COMPLETED ACCORDING TO THE PLANS AND SPECIFICATIONS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE CONSTRUCTION / ERECTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES PROVIDING TEMPORARY BRACING, SHORING, GUYS OR TIE-DOWNS. THESE TEMPORARY SUPPORTS SHALL REMAIN IN PLACE UNTIL ALL STRUCTURAL COMPONENTS ARE IN PLACE AND COMPLETED AS THE STRUCTURAL MEMBERS OR SYSTEMS ARE NOT SELF-BRACING UNTIL PERMANENTLY CONNECTED TO THE STRUCTURE.
5. THE ARCHITECT AND STRUCTURAL ENGINEER ASSUME NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION. AS SUCH, THE MEANS AND METHODS OF CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR(S).
6. USE OF THESE ENGINEERING DRAWINGS, PLANS OR DETAILS USED AS ERECTION PLANS OR SHOP DRAWINGS BY THE CONTRACTOR IS EXPRESSLY PROHIBITED. SUBMITTALS BEARING IMAGES ELECTRONICALLY COPIED FROM THE ENGINEERING DRAWINGS WILL BE REJECTED.

DEFERRED SUBMITTALS

COMPONENTS OF THE PROJECT DESIGNED BY THE CONTRACTOR'S SPECIALTY ENGINEER WHICH REQUIRE PRODUCT OR SYSTEM ENGINEERING, SEALED SHOP DRAWINGS AND CALCULATIONS TO BE SUBMITTED FOR REVIEW BY THE ENGINEER OF RECORD ARE AS FOLLOWS:

- COLD-FORMED METAL FRAMING
- CURTAIN WALL SYSTEMS

SHOP DRAWING SUBMITTALS

SHOP DRAWINGS, FABRICATION DETAILS, PRODUCT LITERATURE AND CERTIFICATES SHALL BE SUBMITTED BEARING THE CONTRACTOR'S REVIEW STAMP FOR THE FOLLOWING STRUCTURAL SYSTEMS. FAILURE OF THE CONTRACTOR TO STAMP SUBMITTAL PRIOR TO FORWARDING THEM TO THE DESIGN PROFESSIONAL(S) FOR REVIEW SHALL CONSTITUTE GROUNDS FOR REJECTION. USE OF THESE ENGINEERING DRAWINGS, PLANS OR DETAILS USED AS ERECTION PLANS OR SHOP DRAWINGS BY THE CONTRACTOR IS EXPRESSLY PROHIBITED. SUBMITTALS BEARING IMAGES ELECTRONICALLY COPIED FROM THE ENGINEERING DRAWINGS WILL BE REJECTED.

- CONCRETE COMPONENTS, MIX DESIGNS AND CONCRETE REINFORCEMENT
- MASONRY COMPONENTS AND REINFORCEMENT
- STRUCTURAL STEEL, OPEN WEB JOISTS, METAL DECK AND METAL FABRICATIONS
- COLD-FORMED METAL FRAMING
- CURTAIN WALL SYSTEMS

EXISTING CONDITIONS

VERIFY ALL DIMENSIONS AND CONDITIONS ASSUMED AS EXISTING (I.E. EXISTING MATERIALS; FOUNDATION SIZES AND CONFIGURATION; FRAMING MEMBER SIZES AND LOCATIONS; METHODS OF CONSTRUCTION, ETC.) AT THE SITE PRIOR TO CONSTRUCTION AND FABRICATION. IF DISCREPANCIES ARE FOUND, NOTIFY THE ARCHITECT PRIOR TO PROCEEDING.

SHORING

1. WHILE DETERMINING THE "MEANS AND METHODS" OF CONSTRUCTION, THE CONTRACTOR MAY DEEM SHORING TO BE NECESSARY TO PROVIDE A SAFE WORK PLACE. CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN TO PREPARE ALL REQUIRED SHORING AND TEMPORARY BRACING DRAWINGS, INCLUDING THE CONTRACTOR'S PROPOSED SHORING PROCEDURE. SEALED SHORING DRAWINGS, CALCULATIONS AND SHORING PROCEDURE SHALL BE SUBMITTED FOR APPROVAL PRIOR TO COMMENCING WORK.
2. CONTRACTOR SHALL ESTABLISH A BENCHMARK TO DETERMINE AND MONITOR ALL ELEVATION CHANGES DURING THE PROCEDURE.
3. CONTRACTOR SHALL PROVIDE CRIBBING OR OTHER APPROVED MEANS TO LIMIT THE CONTACT PRESSURE TO THE EXISTING SLAB ON GRADE TO A MAXIMUM OF 1500 PSF.
4. SHORING SHALL BE PERFORMED USING CALIBRATED JACKS. JACK SPECIFICATIONS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO COMMENCING WORK.
5. SHORING LOAD SHALL BE APPLIED TO THE STRUCTURE UNIFORMLY AND GRADUALLY, APPROXIMATELY 20% EVERY 30 MINUTES, TO TRANSMIT FORCES TO THE STRUCTURE IN A STATIC MANNER.
6. SHORING LOAD SHALL BE REMOVED FROM THE STRUCTURE UNIFORMLY AND GRADUALLY, APPROXIMATELY 20% EVERY 30 MINUTES, TO PREVENT THE APPLICATION OF IMPACT FORCES ON THE STRUCTURE.

PREFABRICATED WOOD ROOF TRUSSES:

1. PREFABRICATED WOOD TRUSSES SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS FASTENINGS AS RECOMMENDED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION.
2. TRUSS MEMBERS AND CONNECTIONS SHALL BE PROPORTIONED, WITH A MAXIMUM ALLOWABLE STRESS INCREASE FOR LOAD DURATION OF 15%, TO WITHSTAND THE FOLLOWING LOADS:
- |               |              |  |
|---------------|--------------|--|
| ROOF LOADING: | TOP CHORD:   | DL = 15 PSF<br>LL = (REFER TO DESIGN LIVE LOADING) |
|               | BOTTOM CHORD | DL = 5 PSF   |
3. TRUSS MANUFACTURER SHALL DESIGN FLOOR TRUSSES SUPPORTING LOAD BEARING WALLS TO CARRY THE LOAD IMPOSED BY THE BEARING WALL IN ADDITION TO SPECIFIED LOADING.
4. TRUSS MANUFACTURER SHALL DESIGN ALL FLOOR AND ROOF TRUSSES FOR ALL GRAVITY, SHEAR AND WIND LOADS.
5. TRUSSES ARE DESIGNED FOR IN SERVICE CONDITIONS ONLY. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROPERLY BRACE TRUSSES DURING LIFTING AND ERECTION.
6. THE TRUSS MANUFACTURER SHALL SUBMIT THE FOLLOWING CERTIFICATIONS, SEALED BY THE ENGINEER RESPONSIBLE FOR DESIGN, FOR THE ARCHITECT'S APPROVAL PRIOR TO FABRICATION OF ANY MATERIALS.

- CERTIFICATION OF THE RATED LOAD CAPACITY OF THE CONNECTORS USED TO SECURE THE MEMBERS BY AN INDEPENDENT AGENCY.
- CERTIFICATION THAT THE MANUFACTURER IS LICENSED TO FABRICATE TRUSSES UTILIZING THE CONNECTOR SYSTEM PROPOSED.
- CERTIFICATION THAT THE TRUSSES ARE DESIGNED TO MEET THE LOAD CRITERIA SPECIFIED HEREIN.
- FABRICATION AND INSTALLATION DRAWINGS SHALL BE SUBMITTED TO THE CONTRACTOR FOR APPROVAL OF SIZE, SHAPE AND LAYOUT PRIOR TO FABRICATION OF MATERIALS.
- CERTIFICATION THAT THE TRUSSES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE CRITERIA SET FORTH IN TP1-12007.

7. TRUSS LENGTHS AND PROFILES SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS PRIOR TO FABRICATION. CONFIGURATION AND SIZE OF WEB CHORD MEMBERS SHALL BE DETERMINED BY TRUSS MANUFACTURER.
8. CONTRACTOR SHALL KEEP TRUSSES Laterally Braced During Erection, Until All Diaphragms Are Installed.
9. THE MOISTURE CONTENT OF LUMBER SHALL NOT EXCEED 19% NOR BE LESS THAN 7% AT THE TIME OF FABRICATION.
10. TRUSS MANUFACTURER SHALL RECOMMEND FOR INSTALATION BY THE GENERAL CONTRACTOR, THE MINIMUM BRIDGING REQUIRED FOR OPEN WEB WOOD FLOOR AND ROOF TRUSSES.
11. TRUSS MANUFACTURER (DESIGNER) SHALL PUBLISH THE MAXIMUM NET UPLIFT FORCE REQUIRED FOR ANCHORAGE OF THE ROOF TRUSSES.
12. MAXIMUM LIVE LOAD DEFLECTION SHALL BE SPAN/240 FOR ROOF TRUSS AND SPAN/360 FOR FLOOR, BALCONY AND BREZEWAY/ CORRIDOR TRUSSES.
13. TRUSS MANUFACTURERS SHALL RECOMMEND MINIMUM ADEQUATE LATERAL BRACING AS NEEDED FOR GABLE END TRUSSES.
14. TRUSS MANUFACTURER SHALL DESIGN ROOF TRUSSES TO SUPPORT ROOF TOP MECHANICAL UNITS. COORDINATE LOCATION AND DESIGN WEIGHT WITH MECHANICAL.

MATERIAL LEGEND		SYMBOL LEGEND	
IMAGE	DESCRIPTION	IMAGE	DESCRIPTION
	CONCRETE MASONRY		
	CONCRETE MASONRY GROUT SOLID		
	SUB-BASE		
	CONCRETE		
	EARTH		
	STEEL		

ABBREVIATIONS			
ACI = AMERICAN CONCRETE INSTITUTE	AESS = ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	AISC = AMERICAN INSTITUTE OF STEEL CONSTRUCTION	ARCH. = ARCHITECT OR ARCHITECTURAL
ASCE = AMERICAN SOCIETY OF CIVIL ENGINEERS	ASTM = AMERICAN STANDARDS FOR TESTING AND MATERIALS	AWS = AMERICAN WELDING SOCIETY	BM = BEAM
B.O. = BOTTOM OF	B1/FTG = BOTTOM OF FOOTING ELEVATION	BRG. = BEARING	CL. = CENTERLINE
DN. = DOWN	DNR = DEPARTMENT OF NATURAL RESOURCES	DWGS. = DRAWINGS	E.F. = EACH FACE
ELECT. = ELECTRICAL	ELEV. = ELEVATION	E.W. = EACH WAY	EX. EXIST. = EXISTING
EXP. = EXPANSION	F.F. = FINISH FLOOR ELEVATION	G.T. = GIRDER TRUSS	HI = HIGH
HORIZ. = HORIZONTAL	KIPS = KILOPOUNDS	LL.V. = LONG LEG VERTICAL	LL.H. = LONG LEG HORIZONTAL
LO = LOW	MAS. = MASONRY	MAX. = MAXIMUM	MB. = 2015 MICHIGAN BUILDING CODE
MECH. = MECHANICAL	MIN. = MINIMUM	MPC = MASS POURED CONCRETE	MPH = MILES PER HOUR
NMA = NATIONAL CONCRETE MASONRY ASSOCIATION	O.C. = ON CENTER		

STRUCTURAL CODE DATA	
DESIGN CRITERIA PER 2015 MICHIGAN BUILDING CODE AND ASCE7-16 LOAD STANDARD	1603.1.5 EARTHQUAKE DESIGN DATA: SEISMIC IMPORTANCE FACTOR Is = 1.25 MAPPED SPECTRAL RESPONSE COEFFICIENTS: Ss = 0.095g S1 = 0.047g
1604.5 BUILDING OCCUPANCY: CATEGORY II	SITE CLASS = D MAPPED SPECTRAL RESPONSE COEFFICIENTS: Sds = 0.101g Sd1 = 0.075g
1603.1.1 FLOOR LIVE LOAD: RESIDENTIAL = N/A OFFICES = 50 PSF OFFICE CORRIDORS ABOVE 1ST FLOOR = 80 PSF STAIRS = 100 PSF	SEISMIC DESIGN CATEGORY B BASIC SEISMIC FORCE RESISTING SYSTEMS ORDINARY WOOD SHEAR WALLS SEISMIC RESPONSE COEFFICIENTS: Cs = 0.016 RESPONSE MODIFICATION FACTOR: R = 6.5 DESIGN BASE SHEAR = 0.026W ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE PER ASCE 7, SECTION 12.8
1603.1.2 ROOF LIVE LOAD: MINIMUM = 20 PSF	1603.1.6 GEOTECHNICAL INFORMATION: REFER TO FOUNDATION NOTES ON THIS SHEET
1603.1.3 ROOF SNOW LOAD: GROUND SNOW LOAD Pg = 30 PSF EXPOSURE = B FLAT ROOF SNOW Pf = 20 PSF EXPOSURE FACTOR Ce = 1.00 IMPORTANCE FACTOR Is = 1.10 THERMAL FACTOR Ct = 1.00	1603.17 FLOOD DESIGN DATA: THIS STRUCTURE IS NOT LOCATED IN A FLOOD HAZARDOUS AREA.
1603.1.4 WIND LOAD: BASIC WIND SPEED = 115 MPH EXPOSURE = B WIND IMPORTANCE FACTOR Iw = 1.00 INTERNAL PRESSURE COEFFICIENT = +/-0.18 ULTIMATE COMPONENTS AND CLADDING PRESSURES: ROOF (50 S.F.) = -24.3 PSF (ZONE 1) ROOF (50 S.F.) = -32.7 PSF (ZONE 2) ROOF (50 S.F.) = -39.3 PSF (ZONE 3) WALL (50 S.F.) = -23.2 PSF (ZONE 4) WALL (50 S.F.) = -26.7 PSF (ZONE 5)	1603.1.8 SPECIAL LOADS: REFER TO ROOF FRAMING PLANS FOR ROOFTOP EQUIPMENT LOADS.

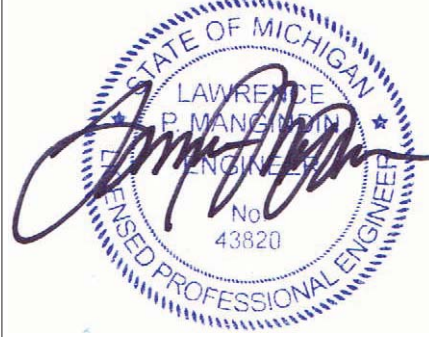
DRAWING INDEX		ISSUED FOR	CLIENT REVIEW	PERMIT
<input checked="" type="radio"/> ISSUED AS NEW OR REVISED				
<input type="radio"/> ISSUED FOR REFERENCE ONLY				
LICENSE #. 6201043820. LICENSE EXPIRES ON: 04/22/23 THE PROFESSIONAL ENGINEER SEAL COVERS ONLY THE SHEETS LISTED BELOW		DATE	11/30/2021	12/23/2021
SHEET	SHEET TITLE			
S0.0	GENERAL NOTES		●	●
S1.0	FOUNDATION PLAN		●	●
S2.2	SECOND FLOOR FRAMING PLAN		●	●
S2.3	THIRD FLOOR FRAMING PLAN		●	●
S3.1	ROOF FRAMING PLAN		●	●
S4.1	1ST AND 2ND FLOOR SHEAR WALL PLAN		●	●
S4.2	3RD FLOOR SHEAR WALL PLAN		●	●
S5.0	FOUNDATION DETAILS		●	●
S6.0	FRAMING DETAILS		●	●
S6.1	FRAMING DETAILS		●	●



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Registration Seal:



12/22/21

Client:

**SERRA MARKO**  
**189 E BIG BEAVER**  
**RD TROY, MI,**  
**480083**

Project Name:

TROY CROSSING APARTMENT BLDG 5

2163 BIG BEAVER RD,  
TROY, MI, 480083

Sheet Name:

GENERAL NOTES

Issued For	Date
CLIENT REVIEW	11-30-21
PERMIT	12-23-21

Drawn By: ME  
Checked By: LM  
Approved By: LM

Job Number:

21117

Sheet Number:

S0.0





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TROY CROSSING APARTMENT BLDG 5

2163 BIG BEAVER RD,  
TROY, MI, 48083

Sheet Name:

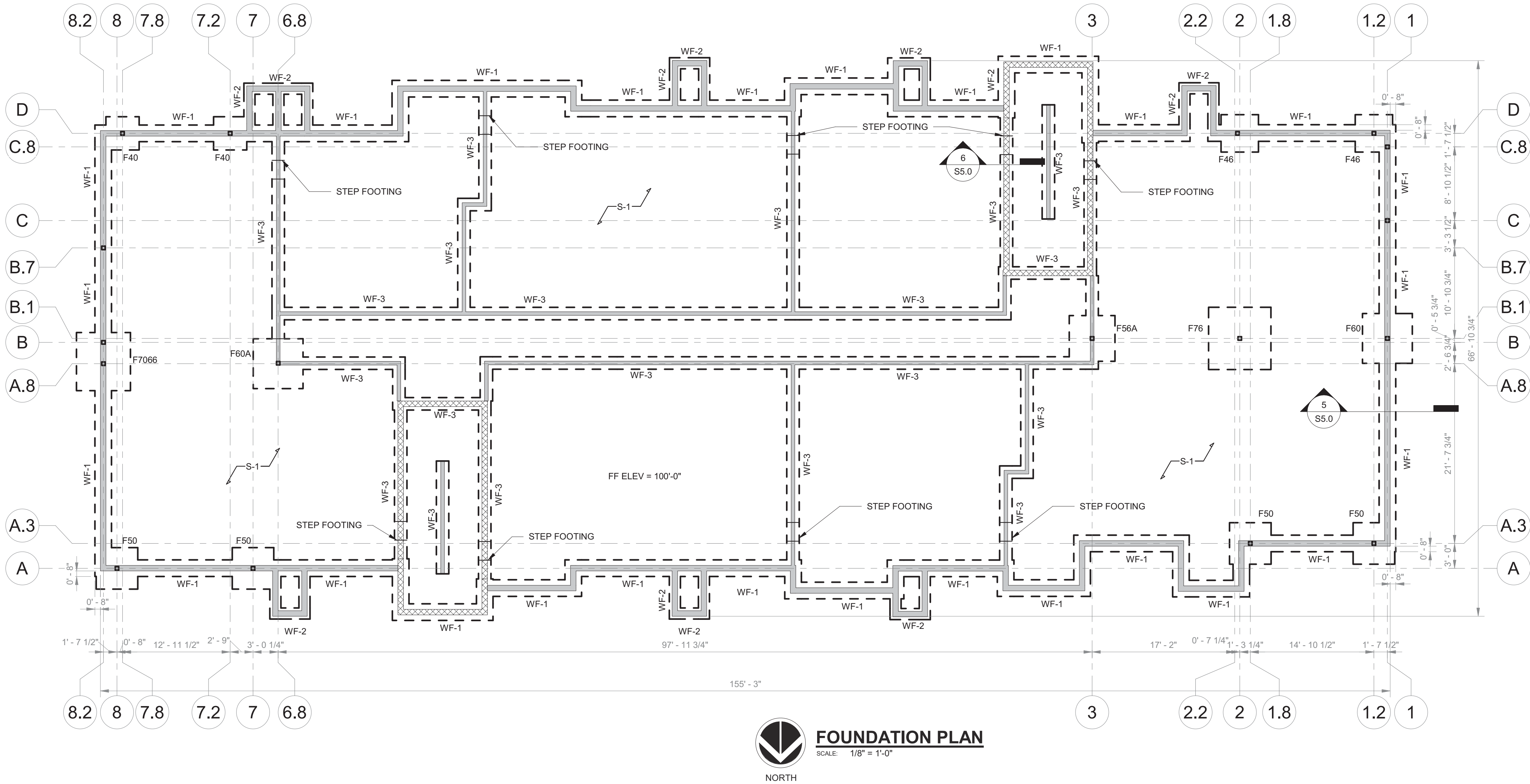
FOUNDATION PLAN

Issued For	Date
CLIENT REVIEW	11-30-21
PERMIT	12-23-21

Drawn By:	ME
Checked By:	LM
Approved By:	LM

Job Number:
21117
Sheet Number:
S1.0

- NOTES:
1. REFER TO SHEET S000 FOR CONCRETE AND REINFORCING SPECIFICATION.
  2. PROVIDE EMBEDDED ANCHOR BOLTS AT EXTERIOR AND INTERIOR BEARING WALLS. USE 1/2" DIA. @ 4'-0" O.C. POST-INSTALLED (MIN. 6" EMBEDMENT WITH EPOXY) AND WITHIN 12" OF END OR CORNER OF WALLS.
  3. TOP OF FOOTING ELEVATION SHALL BE 8" BELOW MAIN FINISH FLOOR. FLOOR SLOPES, UNDERGROUND LINES AND UTILITIES TO BE COORDINATED WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES PRIOR TO PLACEMENT OF FOOTINGS AND SLABS. REFER TO DETAIL 7/S500 FOR PIPE SLEEVE THROUGH FOOTING DETAILS.
  4. MPS INDICATES 3'-6" L MIN. x 3'-6" W x 3'-6" D MASS POUR SLAB ENTRANCE PLATFORM. REFER TO ARCH FOR TOP OF MPS.
  5. S-1 INDICATES 4" CONCRETE SLAB W/ EUCLID FIBRILLATED FIBERS (1/2" TO 1-1/2" LONG), ON 6 MIL VAPOR BARRIER OVER 4" GRANULAR FILL. REFER TO DETAIL 1/S500 FOR MORE INFORMATION.



Column Footing Schedule				
Mark	Width	Length	Depth	Reinforcement
F40	4' - 0"	4' - 0"	3' - 6"	(5) #8 T&B
F46	4' - 6"	4' - 6"	3' - 6"	(5) #8 T&B
F50	5' - 0"	5' - 0"	3' - 6"	(6) #8 T&B
F56A	5' - 6"	5' - 6"	1' - 6"	(6) #6 T&B
F60	6' - 0"	6' - 0"	3' - 6"	(7) #8 T&B
F60A	6' - 0"	6' - 0"	1' - 6"	(6) #6 T&B
F76	7' - 6"	7' - 6"	1' - 6"	(8) #8 T&B
F7066	6' - 6"	7' - 0"	3' - 6"	(8) #8 T&B

WALL FOOTING SCHEDULE			
Mark	Width	Depth	Reinforcement
WF-1	2' - 0"	3' - 6"	(4) #5 T&B
WF-2	1' - 4"	3' - 6"	(3) #5 T&B
WF-3	1' - 6"	1' - 6"	(2) #5 T&B

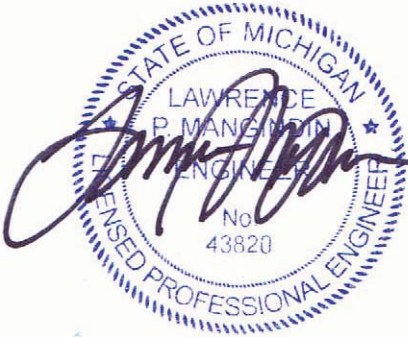




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Project Name:

TROY CROSSING APARTMENT BLDG 5

2163 BIG BEAVER RD,  
TROY, MI, 48063

Sheet Name:

SECOND FLOOR  
FRAMING PLAN

Issued For	Date
CLIENT REVIEW	11-30-21
PERMIT	12-23-21

Drawn By:	ME
Checked By:	LM
Approved By:	LM

Job Number:

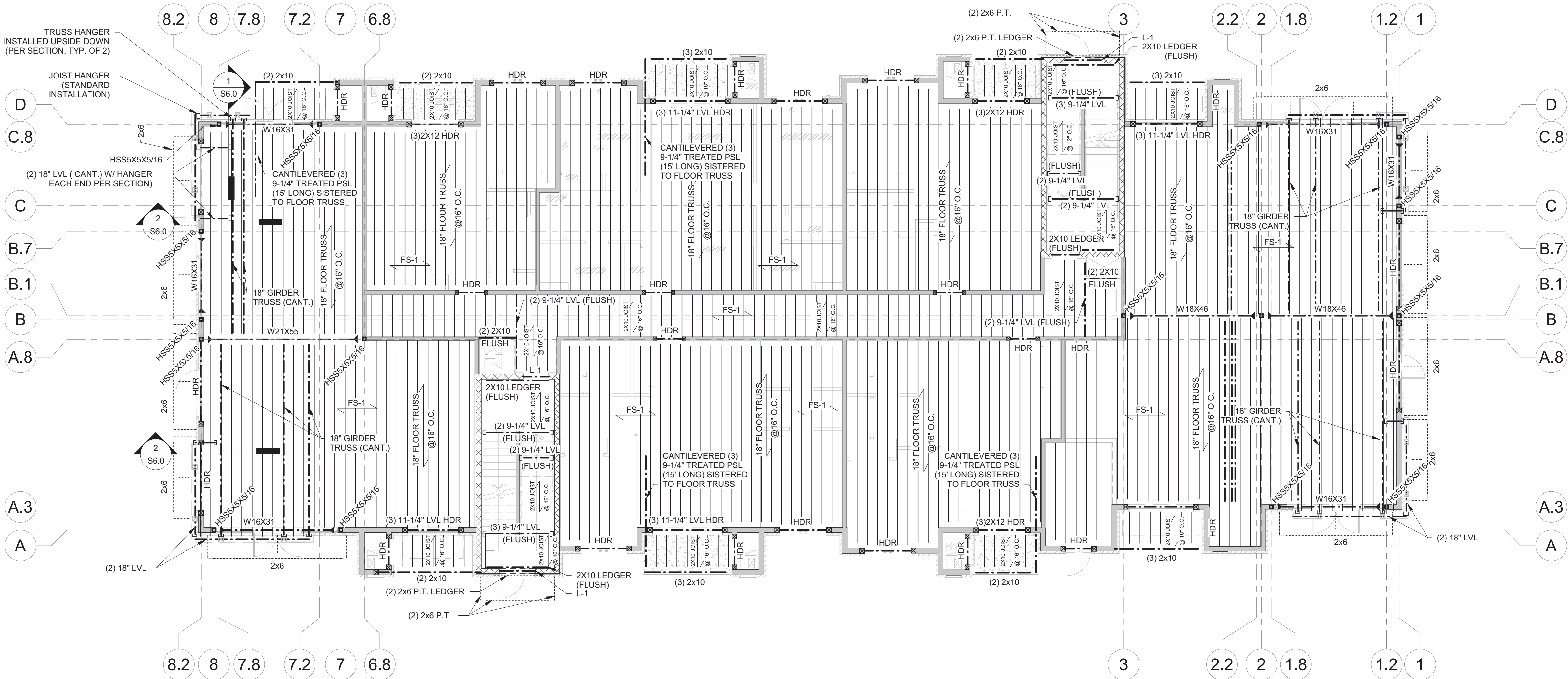
**21117**

Sheet Number:

**S2.2**

NOTES:

1. REFER TO SHEET S000 FOR LUMBER AND OTHER SPECIFICATIONS.
2. HDR INDICATES BUILT - UP WINDOW OR DOOR HEADER. SEE LUMBER NOTES, NOTE 6 ON SHEET S000 FOR HEADER SIZES UNLESS NOTED OTHERWISE.
3. AT HEADERS TO SUPPORT BRICK VENEER, PROVIDE L5X3 1/2X1/4" (LLV) BRICK ANGLE WITH 5/16" DIAMETER x 3-1/8" GRK SCREWS @ 16" O.C. INTO HEADER.
4. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SHAFT LOCATIONS.
5. FS-1 INDICATES FLOOR SHEATHING. 3/4" PLYWOOD ATTACHED TO FLOOR FRAMING WITH #10 SCREWS @ 6" O.C. EDGE AND 12" O.C. FIELD
6. 1ST FLOOR BEARING WALLS U.N.O.:  
INTERIOR WALLS: (2) 2x6 WOOD STUDS @ 16" O.C.  
EXTERIOR WALLS: (2) 2x6 WOOD STUDS @ 16" O.C.
7. AT STAIRWELL PROVIDE JOIST HANGERS AT ALL CONNECTIONS TO FLUSH HEADERS OR LEDGERS.
8. AT STAIRWELL, FASTEN LEDGER TO CMU WITH (2) 3/8" DIA. THREADED ROD (OR EQUAL) @ 16" O.C. AND SIMPSON SET - XP ADHESIVE EPOXY (3 3/8" MIN. EMBEDMENT), PROVIDE BOND BEAM AT ELEVATION OF LEDGER.
9. AT STAIRWELL, PROVIDE SIMPSON HU410 HANGER AT 2-PLY HEADER (TYP. OF 3 LOCATIONS), GROUT SOLID AT HANGER LOCATION AND (2) COURSES BELOW.
10. AT STAIRWELL, PROVIDE SIMPSON HGUM5 25-SDS BEAM HANGER EACH OF 3-PLY HEADER, GROUT SOLID AT HANGER LOCATION AND (2) COURSES BELOW.
11. ► INDICATES FULLY WELDED MOMENT CONNECTION.



NORTH

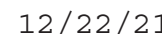
**2ND FLOOR FRAMIN PLAN**

SCALE: 1/8" = 1'-0"





### Registration Seal



#### Client:

Project Name

2163 BIG BEAVER RD,  
TROY MI 48083

Sheet Name:

### THIRD FLOOR FRAMING PLAN

<b>Drawn By:</b>	ME
<b>Checked By:</b>	LM
<b>Approved By:</b>	LM

Job Number:

Sheet Number

## S2.3

- NOTES:
1. REFER TO SHEET S000 FOR LUMBER AND OTHER SPECIFICATIONS.
  2. HDR INDICATES BUILT - UP WINDOW OR DOOR HANGER. SEE LUMBER NOTES, NOTE 6 ON SHEET S000 FOR HEADER SIZES UNLESS NOTED OTHERWISE.
  3. AT HEADERS TO SUPPORT BRICK VENEER, PROVIDE 15x3-1/2x1/4" (LLV) BRICK ANGLE WITH 5/16" DIA. METAL X 3-1/8" GRK SCREWS @ 16" O.C. INTO HEADER. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SHAFT LOCATIONS.
  4. FS-1 INDICATES FLOOR SHEATHING. 3/4" PLYWOOD ATTACHED TO FLOOR FRAMING WITH #10 SCREWS @ 6" O.C. EDGE AND 12" O.C. FIELD
  5. 1ST FLOOR BEARING WALLS U.N.O.C.
  6. INTERIOR WALLS: (2) 2x6 WOOD STUDS @ 16" O.C.
  7. EXTERIOR WALLS: (2) 2x6 WOOD STUDS @ 16" O.C. 1.
  8. AT STAIRWELL PROVIDE JOIST HANGERS AT ALL CONNECTIONS TO FLUSH HEADERS OR LEDGERS.
  9. AT STAIRWELL, FASTEN LEDGER TO CMU WITH (2) 3/8" DIA. THREADED ROD (OR EQUAL) @ 16" O.C. AND SIMPSON SET - XP ADHESIVE EPOXY (3/8" MIN. EMBEDMENT), PROVIDE BOND BEAM AT ELEVATION OF LEDGER.
  10. AT STAIRWELL, PROVIDE SIMPSON HU410 HANGER AT 2-PLY HEADER (TYP. OF LOCATIONS), GROUT SOLID AT HANGER LOCATION AND (2) COURSES BELOW.
  11. AT STAIRWELL, PROVIDE SIMPSON HGUMS 2S-SDS BEAM HANGER EACH END OF 2-PLY HEADER, GROUT SOLID AT HANGER LOCATION AND (2) COURSES BELOW.







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**RD TROY, MI,**  
**480083**

Project Name:

**TROY CROSSING APARTMENT BLDG 5**

2163 BIG BEAVER RD,  
TROY, MI, 48083

Sheet Name:

**ROOF FRAMING PLAN**

Issued For	Date
CLIENT REVIEW	11-30-21
PERMIT	12-23-21

Drawn By:	ME
Checked By:	LM
Approved By:	LM

Job Number:

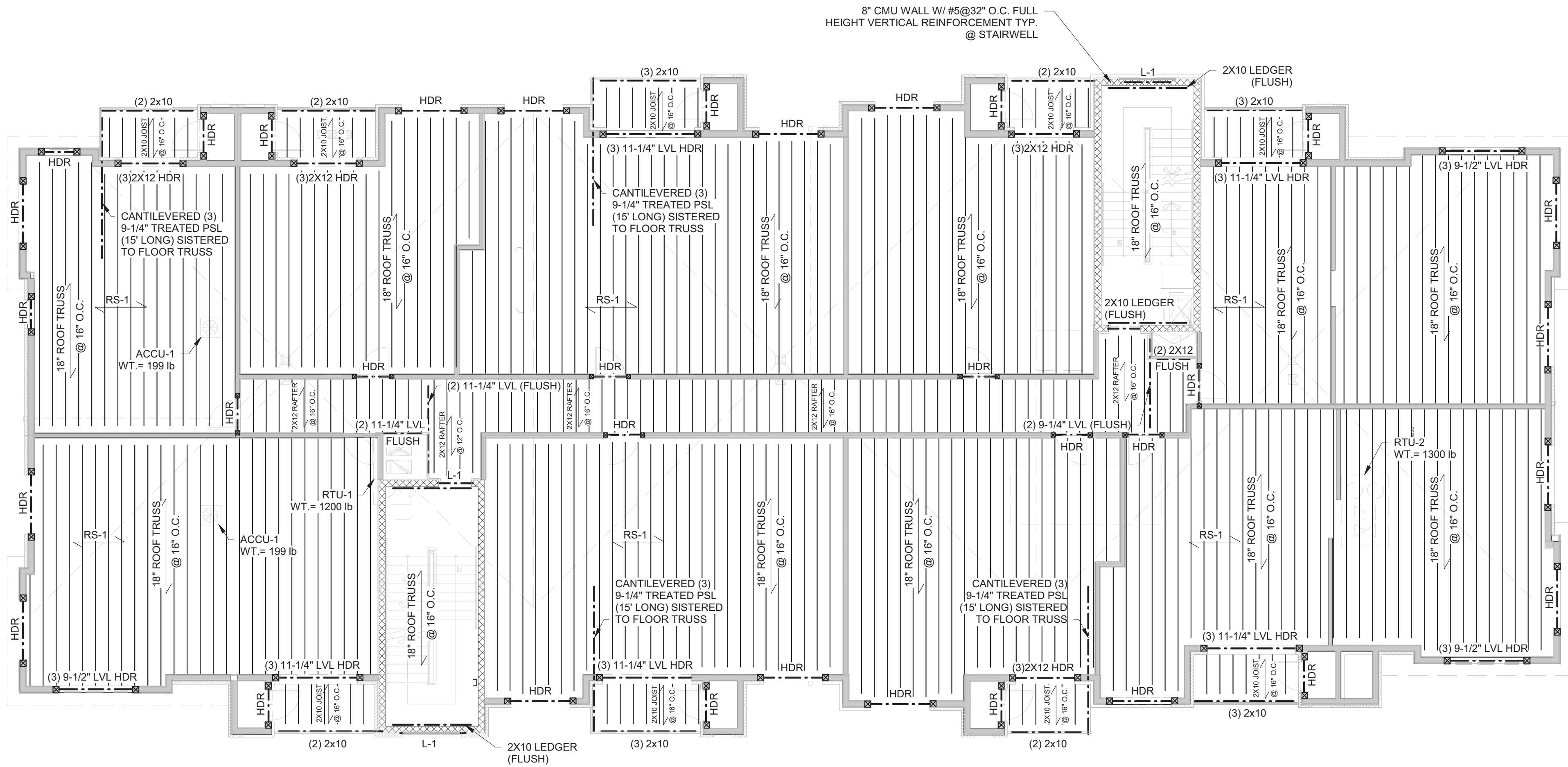
**21117**

Sheet Number:

**S3.1**

**NOTES:**

1. REFER TO SHEET S0.0 FOR STEEL AND OTHER SPECIFICATIONS.
2. RS-1 INDICATES 1/2" PLYWOOD ROOF SHEATING.
3. REFER TO MECHANICAL DRAWINGS FOR ROOF TOP EQUIPMENT WEIGHTS AND LCOATIONS.
4. REFER TO MECHANICAL DRAWINGS FOR DRAINAGE LOCATIONS.
5. ATTACH (2) 2X6, BELOW RTU PERIMETER, TO ADJACENT ROOF TRUSS. TRUSS DESIGNER TO INCLUDE WEIGHT OF RTU, FOR TRUSS DESIGN.
6. AT STAIRWELL PROVIDE JOIST HANGERS AT ALL CONNECTIONS TO FLUSH HEADERS OR LEDGERS.
7. AT STAIRWELL, FASTEN LEDGER TO CMU WITH (2) 3/8" DIA. THREADED ROD (OR EQUAL) @ 16" O.C. AND SIMPSON SET - XP ADHESIVE EPOXY (3 3/8" MIN. EMBEDMENT), PROVIDE BOND BEAM AT ELEVATION OF LEDGER.
8. AT STAIRWELL, PROVIDE SIMPSON HU410 HANGER AT 2-PLY HEADER (TYP. OF 3 LOCATIONS), GROUT SOLID AT HANGER LOCATION AND (2) COURSES BELOW.
9. AT STAIRWELL, PROVIDE SIMPSON HGUM5.25-SDS BEAM HANGER EACH END OF 3-PLY HEADER, GROUT SOLID AT HANGER LOCATION AND (2) COURSES BELOW.



**ROOF FRAMING PLAN**

SCALE: 1/8" = 1'-0"





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Project Name:

TROY CROSSING APARTMENT BLDG 5

2163 BIG BEAVER RD,  
TROY, MI, 48083

Sheet Name:

**1ST AND 2ND FLOOR**  
**SHEAR WALL PLAN**

Issued For	Date
CLIENT REVIEW	11-30-21
PERMIT	12-23-21

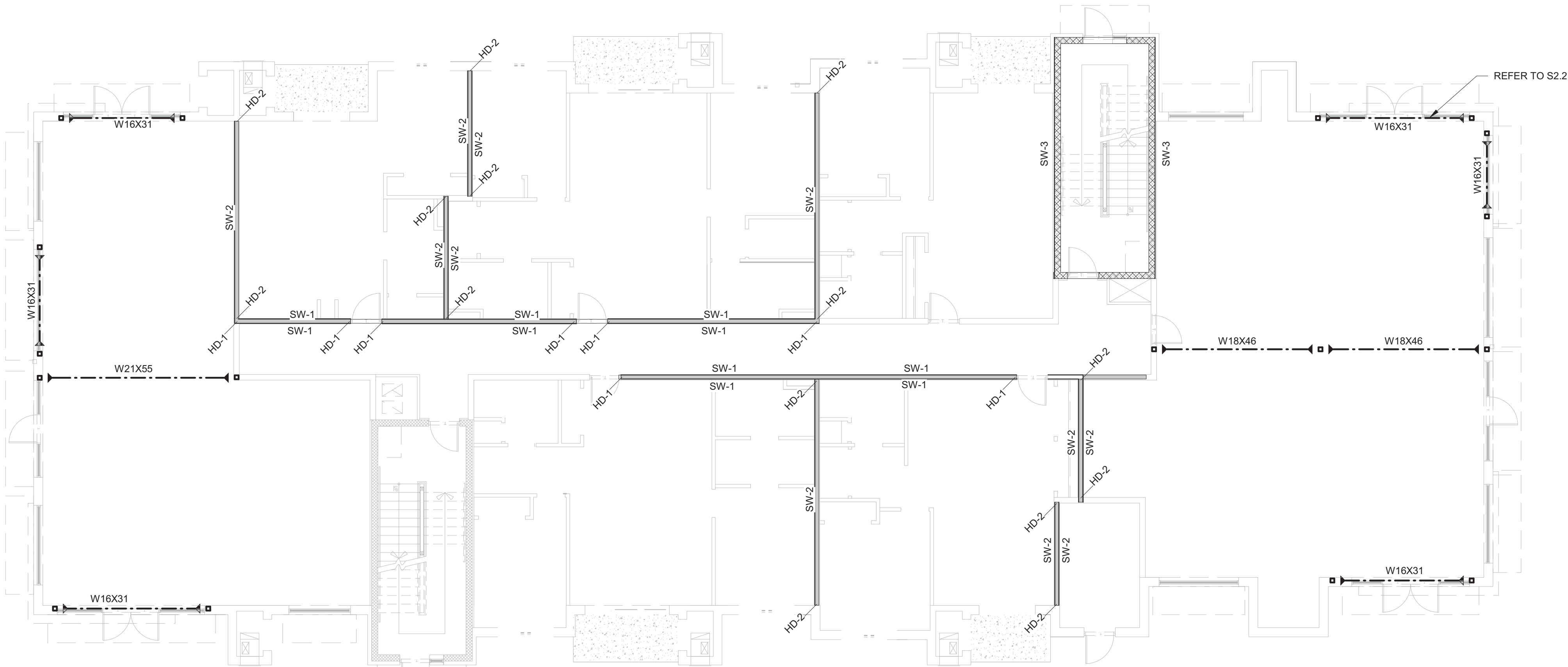
Drawn By:	ME
Checked By:	LM
Approved By:	LM

Job Number:

**21117**

Sheet Number:

**S4.1**



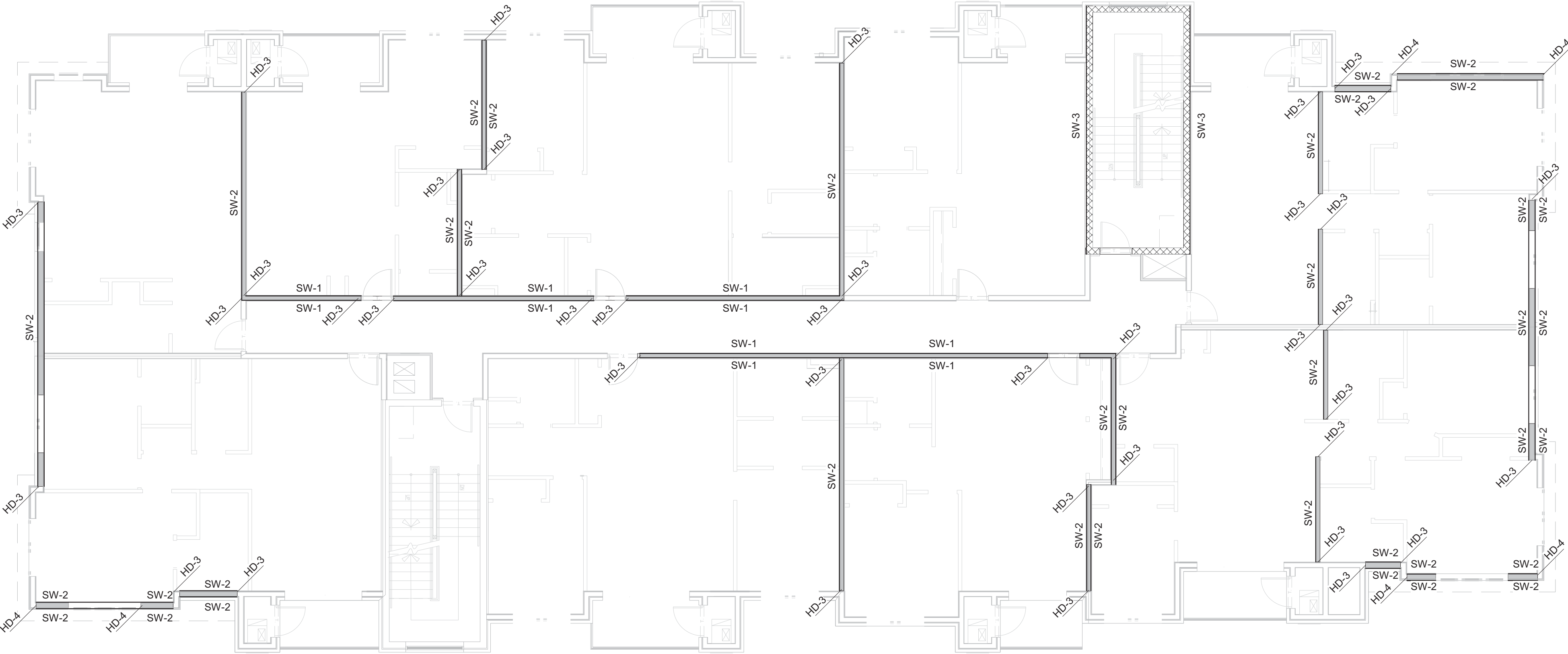
NOTES:

- ALL HOLDDOWNS AND STRAPS SHALL BE INSTALLED PER SIMPSON INSTALTION GUIDE.
- OSB/PLYWOOD GRADE IS TO BE "WOOD STRUCTURAL PANELS-SHEATING".
- PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFRENT FRAMING MEMBERS WHERE PANELS ARE APPLIED ON TWO FACES OF SHEAR WALL.
- PROVIDE (2) 2X STUDS AT ENDS OF WALLS NOT DESIGNATED AS SHEAR WALLS.
- SEE ARCH. FOR SHEARING OF WALLS NOT DESIGNATED AS SHEAR WALLS.
- CONTRACTOR TO COORDINATE LOCATION OF CAST IN PLACE ANCHORS PRIOR TO POURING CONCRETE FOOTINGS.
- A DESIGNATED SHEAR WALL LENGTH MAY INCLUDE OPENINGS SUCH AS WINDOWS OR DOORS. PROVIDE EDGE NAILING PER SHEAR WALL SCHEDULE AROUND OPENINGS.
- DO NOT MODIFY OR OMIT ANY PART OF THIS DRAWING. NOTIFY LME BEFORE MAKING ANY CHANGES OR MODIFICATIONS.
- INDICATES FULLY WELDED MOMENT CONNECTION.



**1ST FLOOR SHEAR WALL PLAN**

SCALE: 1/8" = 1'-0"



**2ND FLOOR SHEAR WALL PLAN**

SCALE: 1/8" = 1'-0"

HOLD-DOWN SCHEDULE				
MARK	HOLD-DOWN	ALLOWABLE TENSION LOADS (LB)	END POST	NOTE
HD-1	HDU5-SDS2.5	5645	(2) 2X8 OR (2) 2X4	1
HD-2	HDU11-SDS2.5	9335	6X6 4X4	1
HD-3	MST72	6730	(2) 2X6 OR (2) 2X4	
HD-4	MST60	6730	(2) 2X8 OR (2) 2X4	2

NOTES:

- PROVIDE SB5/8X24 ANCHOR BOLT W/ HDU5-SDS2.5 HOLDDOWN INTO CONCRETE FOOTING.
- WRAP LOWER HALF OF MST60 STRAP AROUND (2) 18" LVL EDGE MEMBER.

SHEAR WALL SCHEDULE			
MARK	SHEATHING MATERIAL	FASTENER	FASTENER SPACING
SW-1	UNBLOCKED 5/8" GYPSUM WALLBOARD	NO. 6 DRYWALL SCREW	8" O.C. EDGE 12" O.C. INTERMEDIATE
SW-2	BLOCKED 7/16" OSB	8d NAIL	3" O.C. EDGE 12" O.C. INTERMEDIATE
SW-3	8" CMU WALL W/ #5 @ 32" O.C. VERTICAL REINFORCING		

NOTES:

- BLOCKED SHEATHING SHALL HAVE ALL SHEATHING EDGE NAILED TO 2x BLOCKING BETWEEN STUDS.
- THE WIDTH OF THE NAILED FACE OF A COMMON FRAMING MEMBER OR BLOCKING AT ADJOININGPANEL EDGES SHALL BE 3" NOMINAL OR GREATER AND NAILING SHALL BE STAGGERED AT ALL PANEL EDGES WHEN 2" O.C. EDGE FASTENER SPACING IS REQUIRED.





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**RD TROY, MI,**  
**480083**

Project Name:

**TROY CROSSING APARTMENT BLDG 5**

2163 BIG BEAVER RD,  
TROY, MI, 48083

Sheet Name:

**3RD FLOOR SHEAR  
WALL PLAN**

Issued For	Date
CLIENT REVIEW	11-30-21
PERMIT	12-23-21

Drawn By:	ME
Checked By:	LM
Approved By:	LM

Job Number:

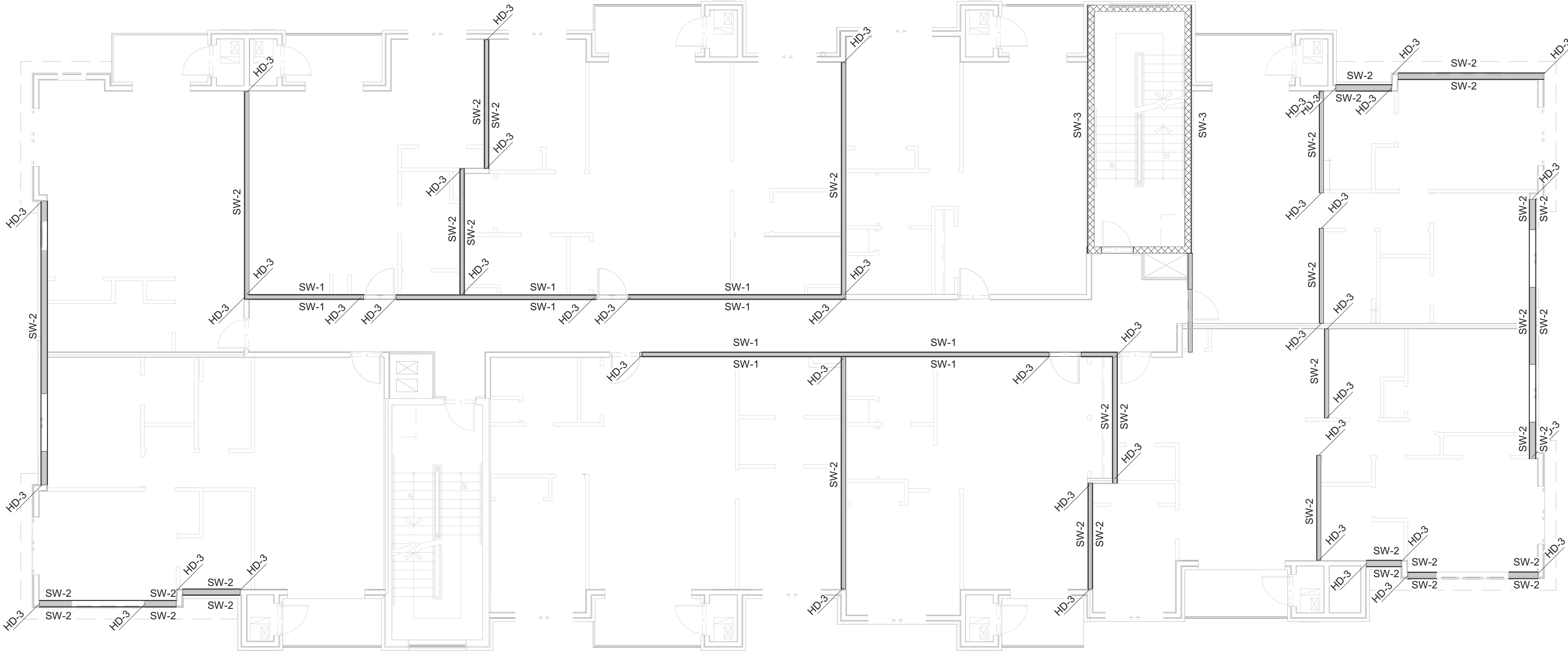
**21117**

Sheet Number:

**S4.2**

NOTES:

- ALL HOLDDOWNS AND STRAPS SHALL BE INSTALLED PER SIMPSON ISNTALLTION GUIDE.
- OSB/PLYWOOD GRADE IS TO BE "WOOD STRUCTURAL PANELS-SHEATING".
- PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFRENT FRAMING MEMBERS WHERE PANELS ARE APPLIED ON TWO FACES OF SHEAR WALL.
- PROVIDE (2) 2X STUDS AT ENDS OF WALLS NOT DESIGNATED AS SHEAR WALLS.
- SEE ARCH. FOR SHEARGING OF WALLS NOT DESIGNATED AS SHEAR WALLS.
- A DESIGNATED SHEAR WALL LENGTH MAY INCLUDE OPENINGS SUCH AS WINDOWS OR DOORS, PROVIDE EDGE NAILING PER SHEAR WALL SCHEDULE AROUND OPENINGS.
- DO NOT MODIFY OR OMIT ANY PART OF THIS DRAWING. NOTIFY LME BEFORE MAKING ANY CHANGES OR MODIFICATIONS.



**3RD FLOOR SHEAR WALL PLAN**

SCALE: 1/8" = 1'-0"

NORTH

HOLD-DOWN SCHEDULE				
MARK	HOLD-DOWN	ALLOWABLE TENSION LOADS (LB)	END POST	NOTE
HD-1	HDU5-SDS2.5	5645	(2) 2X6 OR (2) 2X4	1
HD-2	HDU11-SDS2.5	9335	6X6 4X4	1
HD-3	MST72	6730	(2) 2X6 OR (2) 2X4	
HD-4	MST60	6730	(2) 2X6 OR (2) 2X4	2

NOTES:

- PROVIDE SB5/8X24 ANCHOR BOLT W/ HDU5-SDS2.5 HOLDDOWN INTO CONCRETE FOOTING.
- WRAP LOWER HALF OF MST60 STRAP AROUND (2) 18" LVL EDGE MEMBER.

SHEAR WALL SCHEDULE			
MARK	SHEATHING MATERIAL	FASTENER	FASTENER SPACING
SW-1	UNBLOCKED 5/8" GYPSUM WALLBOARD	NO. 6 DRYWALL SCREW	8" O.C. EDGE 12" O.C. INTERMEDIATE
SW-2	BLOCKED 7/16" OSB	8d NAIL	3" O.C. EDGE 12" O.C. INTERMEDIATE
SW-3	8" CMU WALL W/ #5 @ 32" O.C. VERTICAL REINFORCING		

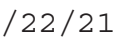
NOTES:

- BLOCKED SHEATHING SHALL HAVE ALL SHEATHING EDGE NAILED TO 2x BLOCKING BETWEEN STUDS.
- THE WIDTH OF THE NAILED FACE OF A COMMON FRAMING MEMBER OR BLOCKING AT ADJOININGPANEL EDGES SHALL BE 3" NOMINAL OR GREATER AND NAILING SHALL BE STAGGERED AT ALL PANEL EDGES WHEN 2" O.C. EDGE FASTENER SPACING IS REQUIRED.





**Registration Seal:**



nt:

**Project Name:**

TROY, MI, 48083

et Name:

## FOUNDATION DETAILS

Created By:	RV
Checked By:	LM
Approved By:	LM

Number:

Number:  
**\$5.0**



SCALE: 1" = 1'-0"



SCALE: 1/2" = 1'-0"



SCALE:  $3/4" = 1'-0"$



**5** TYP. EXTERIOR CMU WALL FOOTING TYPE 2  
SCALE: 3/4" = 1'-0"

SCALE:  $3/4 = 1=0$



**TYP. INTERIOR CMU WALL FOOTING TYPE 3**

SCALE:  $3/4" = 1'-0"$



SCALE: 1" = 1'-0"



SCALE: 1/2" = 1'-0"



SCALE: 1" = 1'-0"

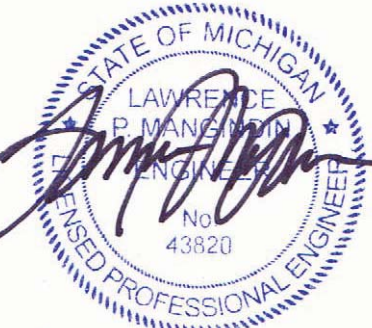




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Project Name:

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Sheet Name:

FRAMING DETAILS

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CLIENT REVIEW	11-30-21
PERMIT	12-23-21

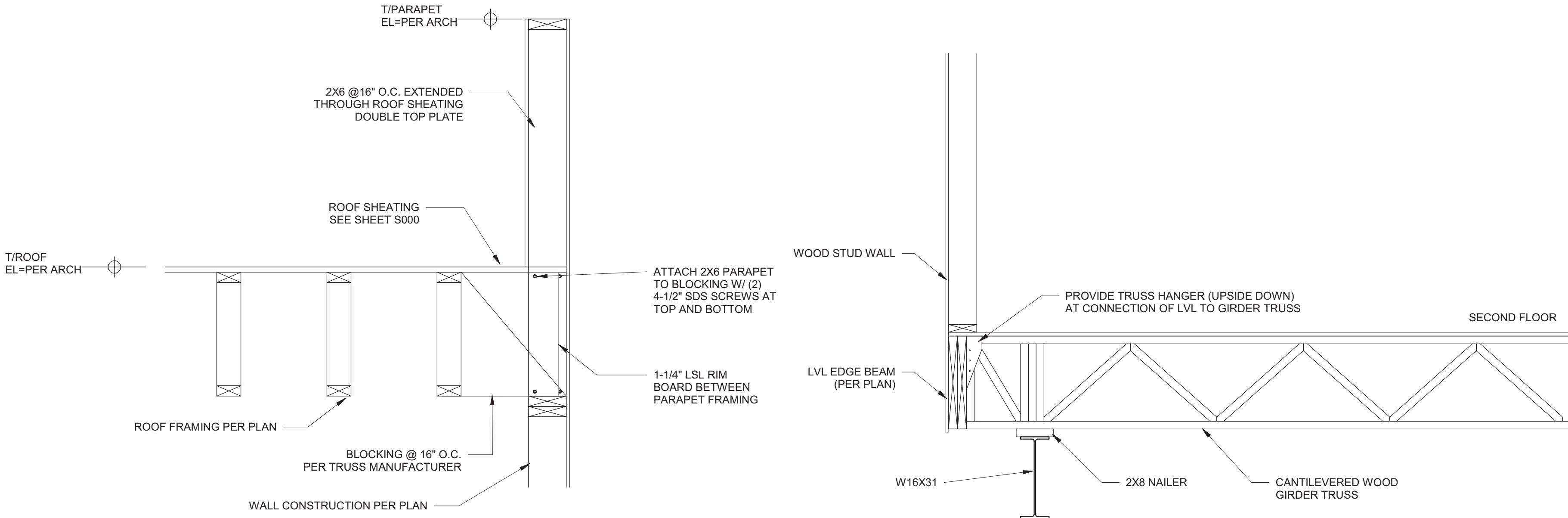
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Checked By:	LM
Approved By:	LM

Job Number:

**21117**

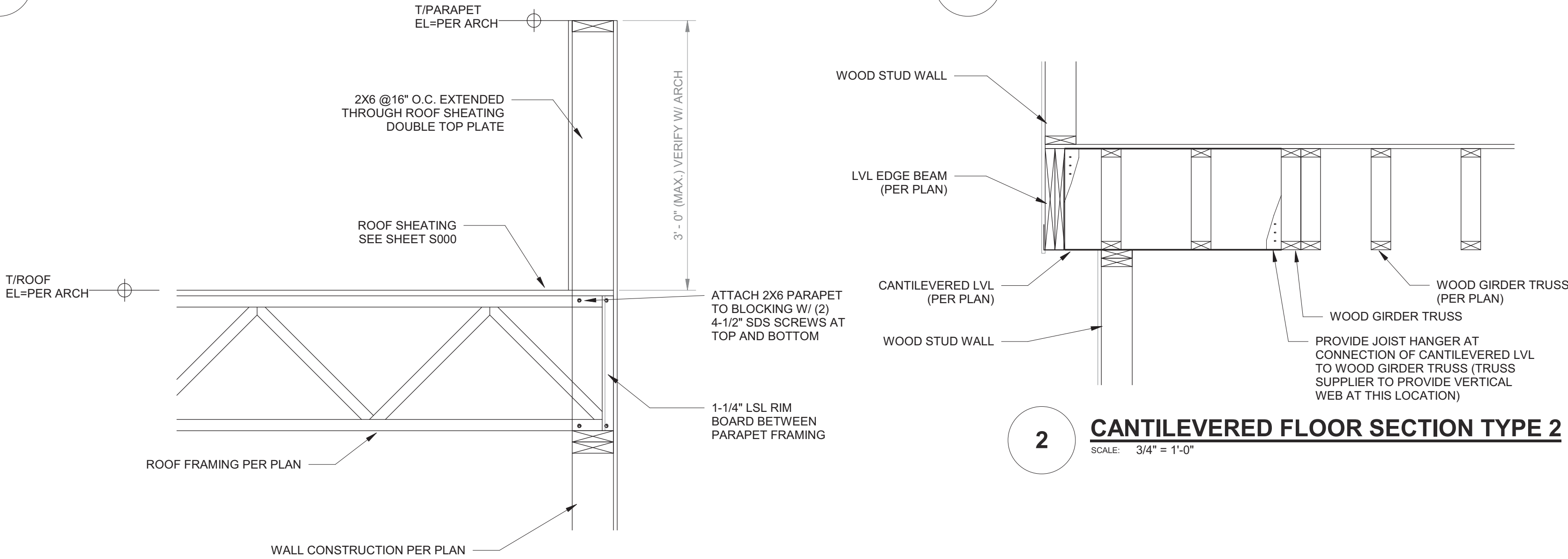
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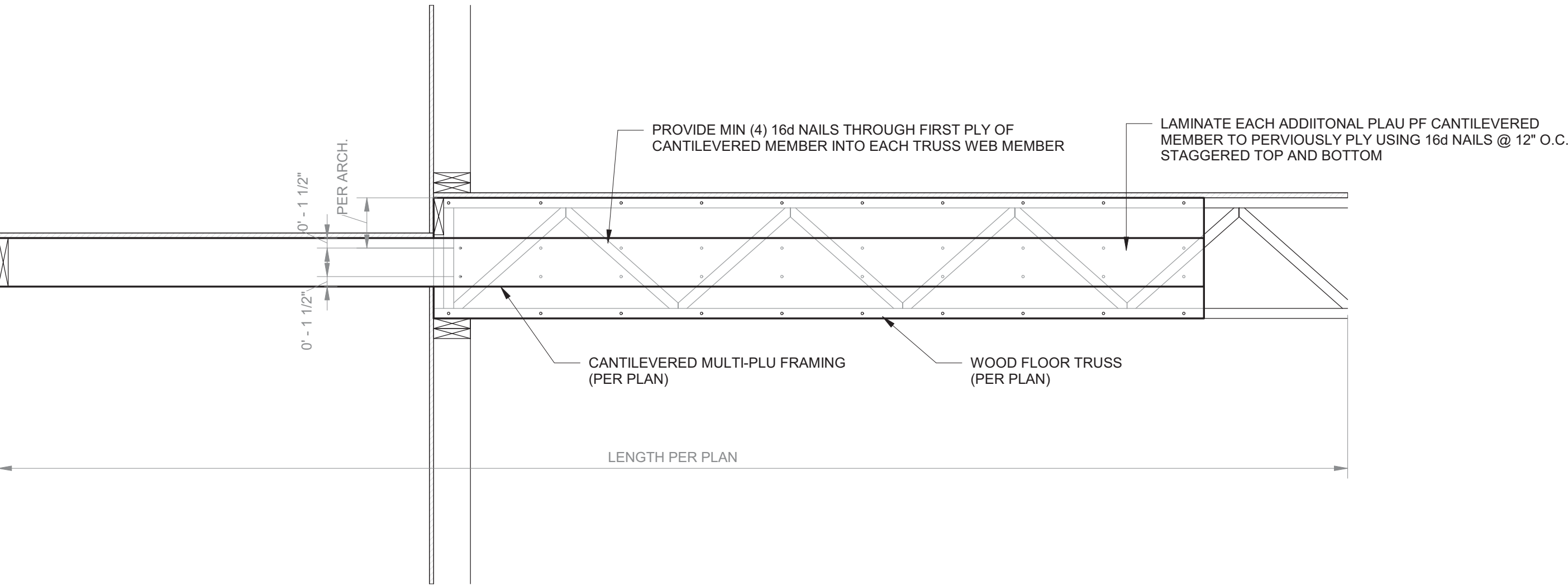
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**1 CANTILEVERED FLOOR SECTION TYPE 1**  
SCALE: 3/4" = 1'-0"



**5 PARAPET SECTION TYPE 2**  
SCALE: 1" = 1'-0"

**2 CANTILEVERED FLOOR SECTION TYPE 2**  
SCALE: 3/4" = 1'-0"



**3 CANTILEVERED FRAMING SECTION**  
SCALE: 3/4" = 1'-0"





LM Engineering

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Madison Heights, MI 48071  
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LM-engineering.net

Registration Seal:



12/22/21

Client:

**SERRA MARKO**  
189 E BIG BEAVER  
RD TROY, MI,  
480083

Project Name:

TROY CROSSING APARTMENT BLDG 5

2163 BIG BEAVER RD,  
TROY, MI, 48083

Sheet Name:

FRAMING DETAILS

Issued For	Date
CLIENT REVIEW	11-30-21
PERMIT	12-23-21

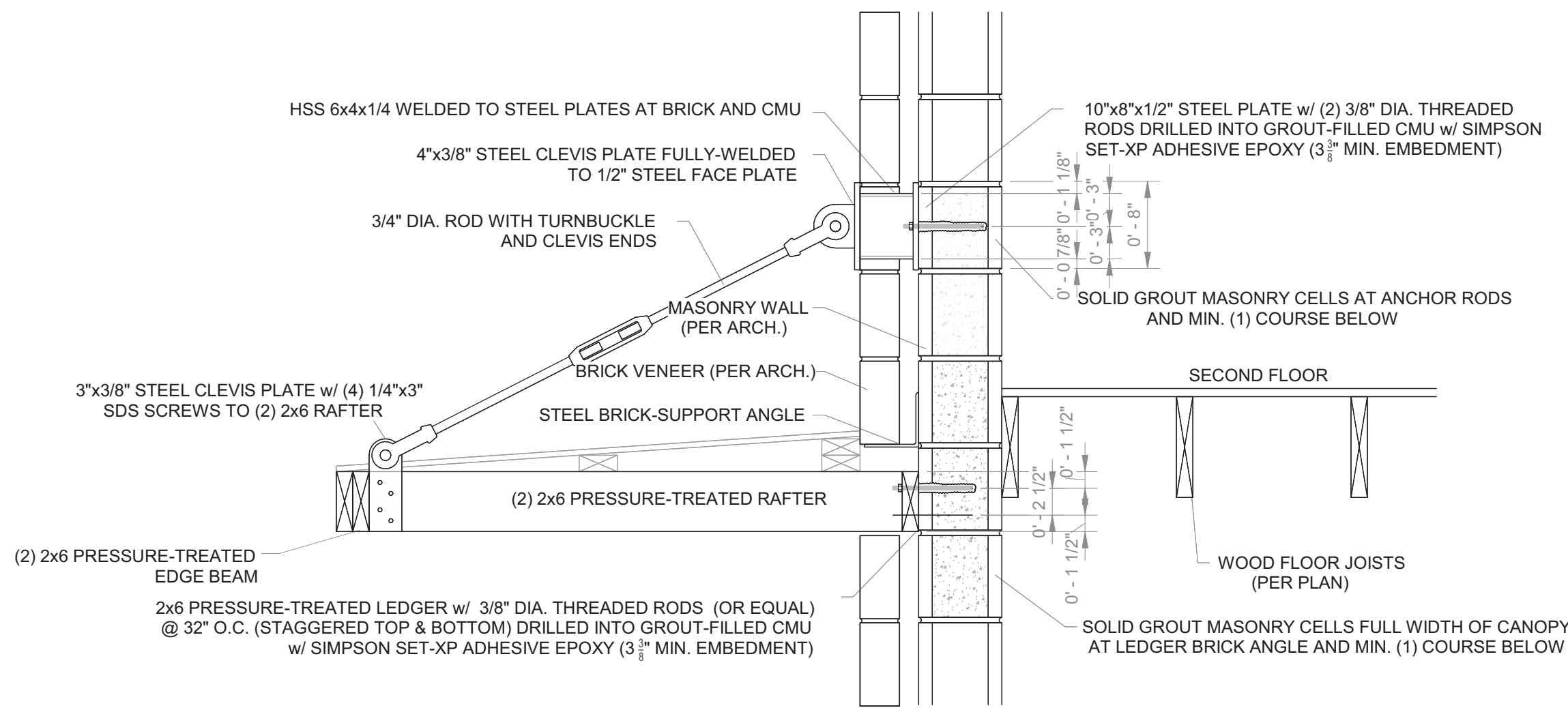
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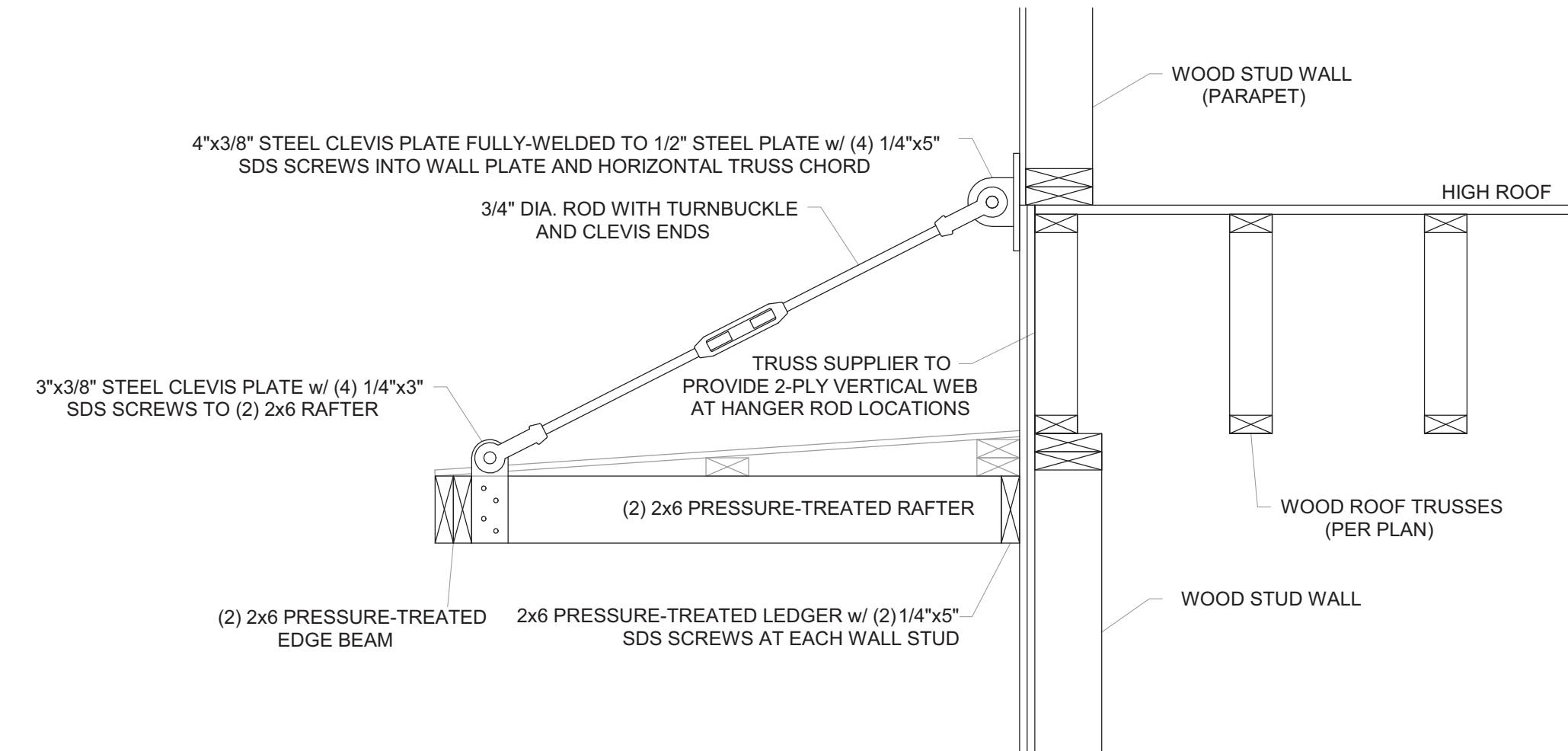
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6

#### CANOPY SECTION AT CMU WALL

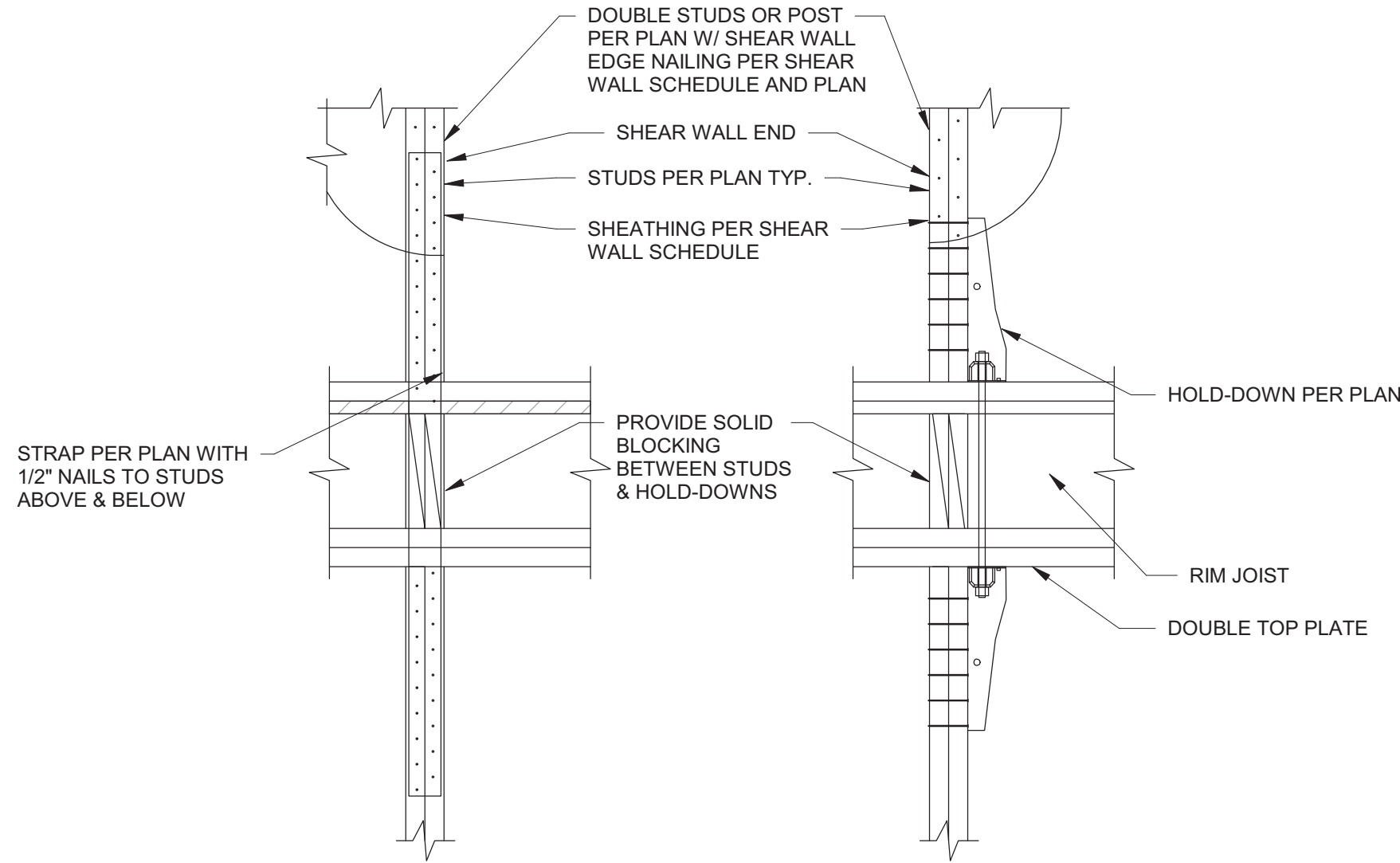
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#### CANOPY SECTION AT STUD WALL

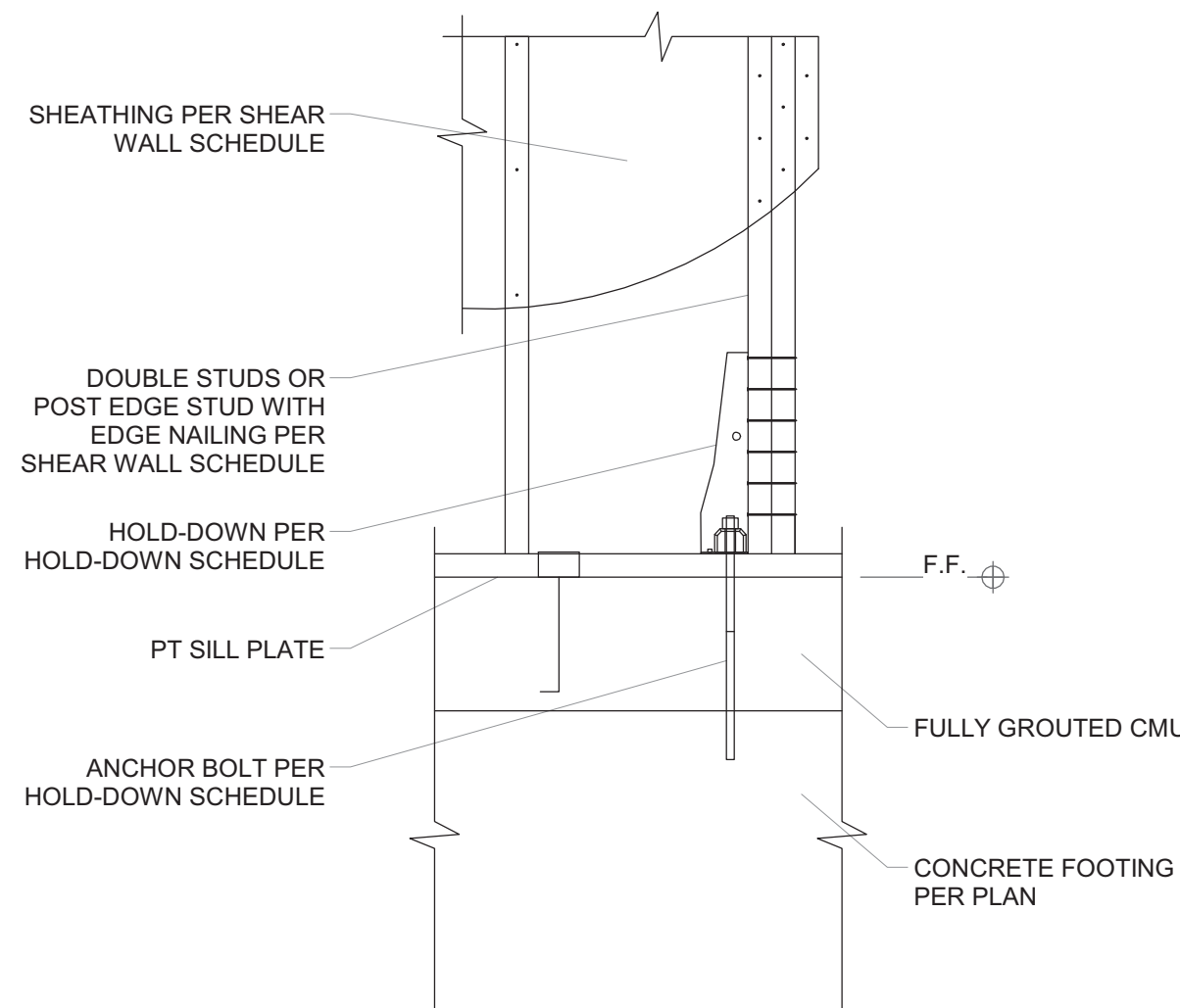
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4

#### TYPICAL WOOD TO WOOD HOLD DOWN

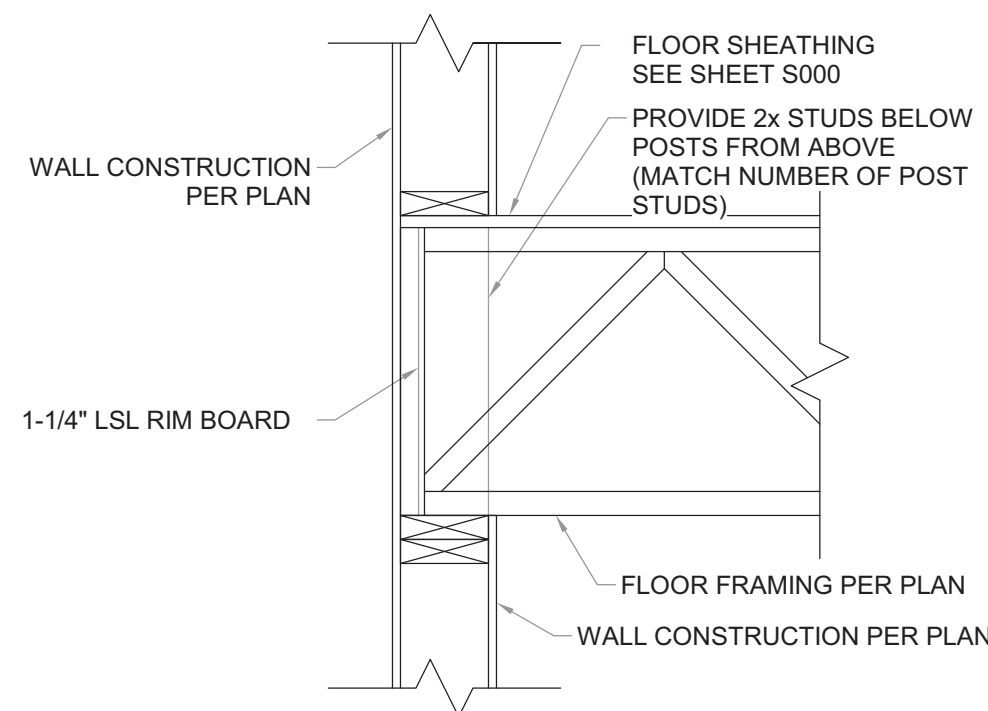
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5

#### TYPICAL WOOD TO CONCRETE HOLD-DOWN

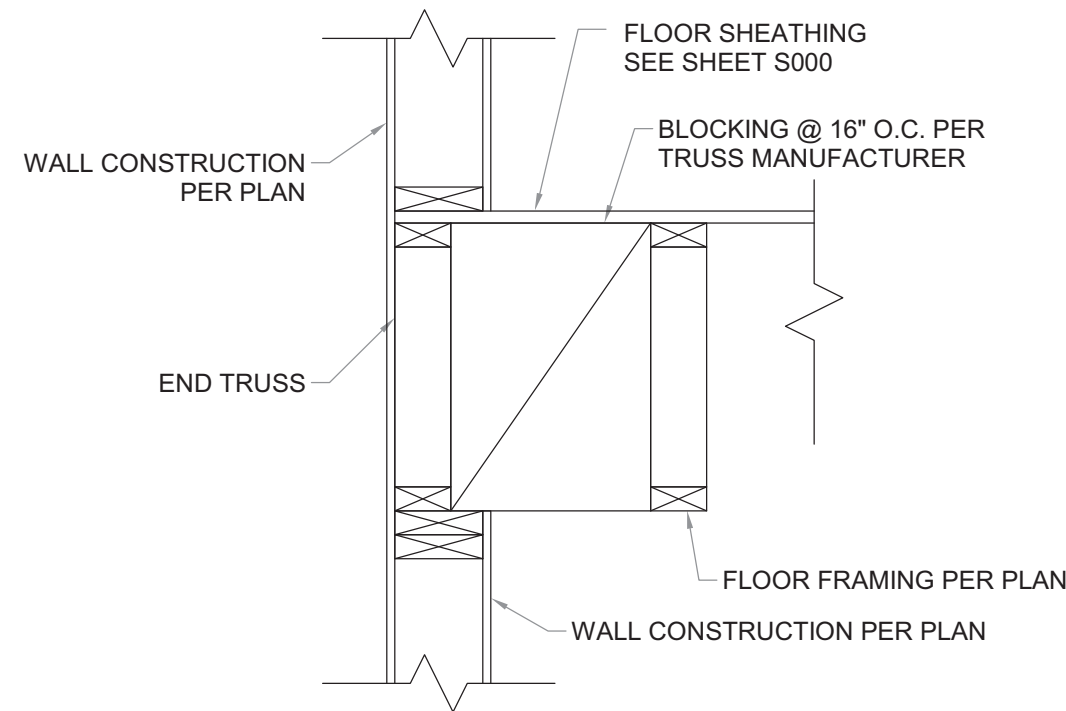
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#### FRAMING SECTION TYPE 1

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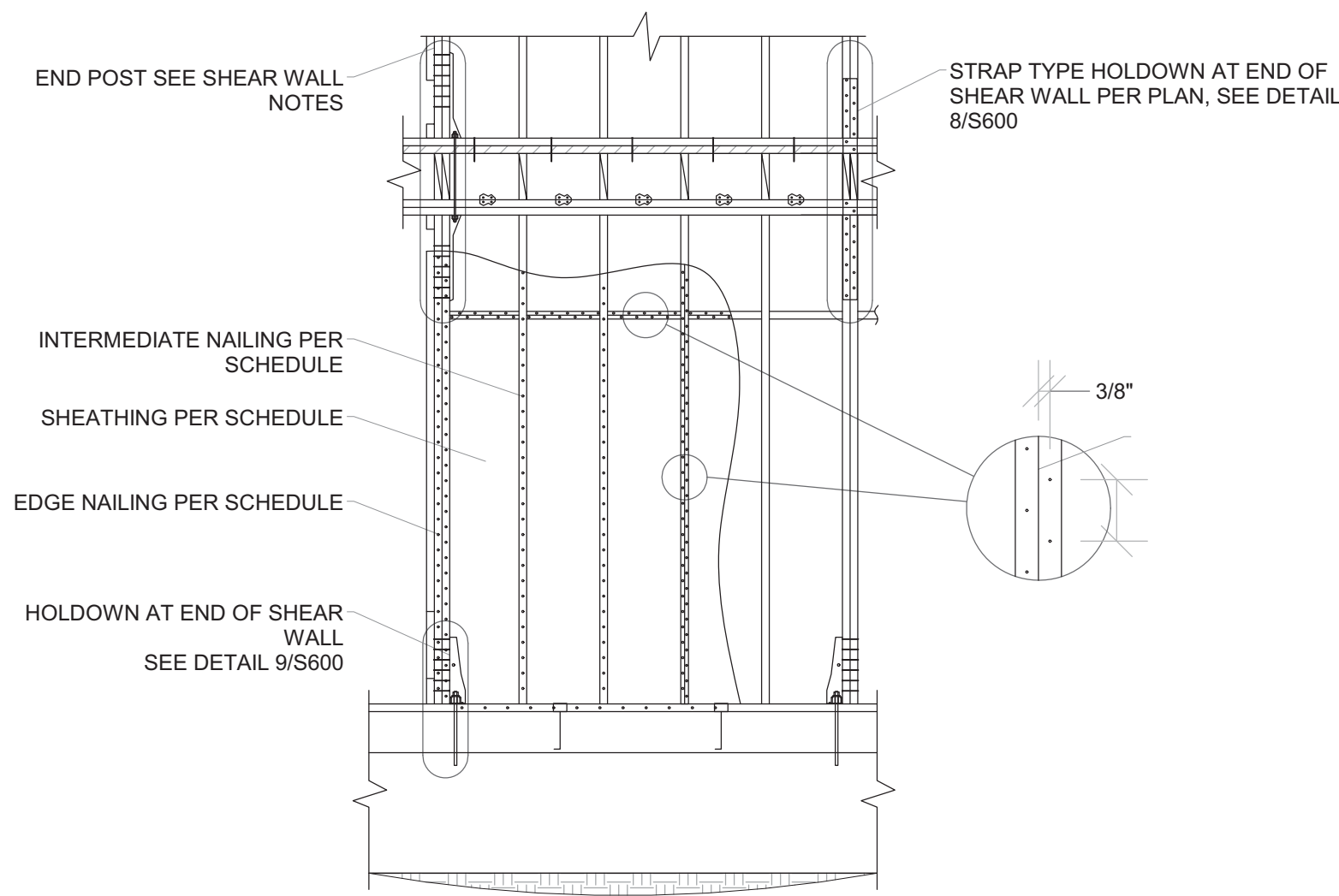


TJI JOIST BEARING ON STUD WALL - ONE SIDE 1" SCALE

2

#### FRAMING SECTION TYPE 2

SCALE: 1" = 1'-0"



3

#### TYPICAL SHEAR WALL ELEVATION

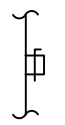



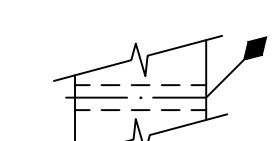
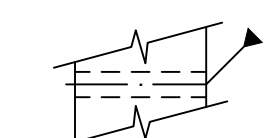
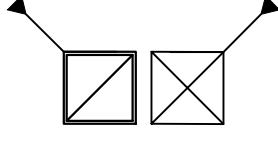
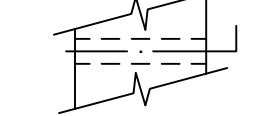
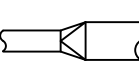

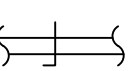
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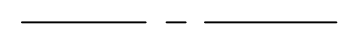
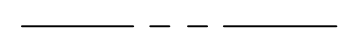
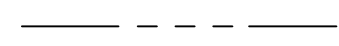



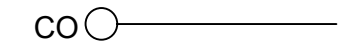
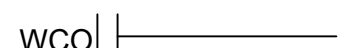



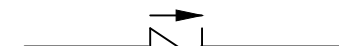

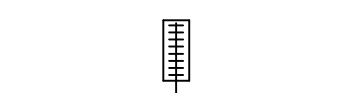

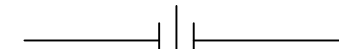



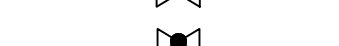


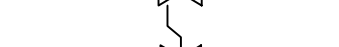
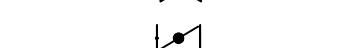

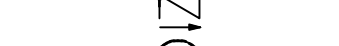




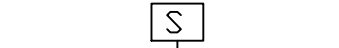





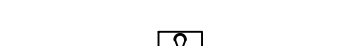
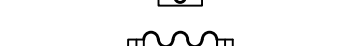




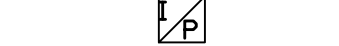


ABBREVIATIONS

A.L.	ACOUSTICAL LINING
B.V.	BALANCING VALVE
C.D.	CEILING DIFFUSER
C.F.M.	CUBIC FEET PER MINUTE
C.I.	CAST IRON
C.O.	CLEAN OUT
DPR.	DAMPER
D.F.	DRINKING FOUNTAIN
D.W.S.	DRINKING WATER SUPPLY
D.W.R.	DRINKING WATER RETURN
E.F.	EXHAUST FAN
ER-#	EXHAUST REGISTER
EWC	ELECTRIC WATER COOLER
F.D.	FLOOR DRAIN
F.DPR.	FIRE DAMPER
H.B.	HOSE BIBB
H.O.	HUB OUTLET
I.E.	INVERT ELEVATION
I.W.	INDIRECT WASTE
LAV.	LAVATORY
LD-#	LINEAR SUPPLY AIR DIFFUSER
LR-#	LINEAR RETURN AIR DIFUSER
O.A.	OUTSIDE AIR
O.B.D.	OPPOSED BLADE DAMPER
O.E.D.	OPEN END DUCT
P.H.	PHYSICAL HANDICAPPED
P.REL.V.	PRESSURE RELIEF VALVE
P-1	PUMP #1
R.A.	RETURN AIR
R.C.	RAIN CONDUCTOR
RG -#	RETURN AIR GRILLE
R.P.B.P.	REDUCED PRESSURE BACKFLOW PREVENTER
RR-#	RETURN AIR REGISTER
R.S.	ROOF SUMP
S.A.	SUPPLY AIR
SD-#	SUPPLY DIFFUSER
SR-#	SUPPLY REGISTER
SAN.	SANITARY
S.S.	SERVICE SINK
ST.	STORM
S.W.S.	SAFE WASTE SINK
T.A.D.	TRANSFER AIR DUCT
T.W.	TEMPERED WATER
U/GRD.	UNDERGROUND
U.H.	UNIT HEATER
UR.	URINAL
V.	VENT
V.T.R.	VENT THRU ROOF
V.V.B.	VARIABLE VOLUME AIR TERMINAL BOX
W.C.	WATER CLOSET
W.H.	WATER HEATER
W.	WASTE

H.V.A.C. SYMBOLS

	SPIN-IN FITTING W/DAMPER
	FLEXIBLE DUCT
	RETURN AIR GRILLE
	SUPPLY AIR DIFFUSER
	HORIZONTAL FIRE DAMPER
	VERTICAL FIRE DAMPER
	RADIANT TYPE DIFFUSERS IN GYP. BD. CEILING AREA
	VOLUME DAMPER
	RECTANGULAR TO ROUND TRANSITION
	THERMOSTAT
	DAMPER

PLUMBING & PIPING SYMBOLS

	DOMESTIC COLD WATER (C.W.)
	DOMESTIC HOT WATER (H.W.)
	DOMESTIC HOT WATER RETURN (H.W.R.)
	NATURAL GAS
	SANITARY SEWER-UNDER GROUND
	SANITARY SEWER-ABOVE GROUND
	FLOOR CLEAN-OUT
	WALL CLEAN-OUT
	STORM SEWER
	VENT
	GATE VALVE
	CHECK VALVE
	BALANCING VALVE
	THERMOMETER
	STRAINER
	UNION
	FLEXIBLE CONNECTOR
	BALL VALVE
	NEW CONNECTION
	VALVE
	GLOBE VALVE
	NEEDLE VALVE
	GAS COCK VALVE
	VALVE WITH HANDWHEEL
	MODULATING VALVE
	DAMPER
	STOP CHECK STRAIGHT VALVE
	CHECK VALVE
	PNEUMATIC CONTROL VALVE
	PRESSURE REGULATOR
	BACK PRESSURE REGULATOR
	DIFFERENTIAL REGULATOR
	SOLENOID VALVE (NORM. OPEN)
	SOLENOID VALVE (NORM. CLOSED)
	MOTOR ACTUATOR
	BALL VALVE
	PRESSURE GAUGE TO MATCH EXISTING
	TURBINE FLOW METER
	FLEX COUPLING (2 FT MIN)
	SPARK PLUG
	PUMP
	STEAM TRAP
	CURRENT / PNEUMATIC POSITIONER
	ELECTRIC MOTOR / ACTUATOR
	INSTRUMENT - NON-ACCESSIBLE

GENERAL MECHANICAL NOTES:

- COORDINATE THE INSTALLATION OF THE MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSULATION. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. ANY MODIFICATIONS REQUIRED DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.
- ALL NEW MECHANICAL EQUIPMENT SHOWN ON THE MECHANICAL PLANS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED.
- NEW MECHANICAL EQUIPMENTS, DUCTWORK, AND PIPING ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.
- REFER TO ARCHITECTURAL DRAWINGS FOR RELATED CONSTRUCTION DETAILS AS APPLICABLE TO THE HVAC SYSTEM. VERIFY CHASES AND PENETRATIONS SHOWN ON ARCHITECTURAL DRAWINGS THAT ARE INTENDED FOR DUCTWORK AND PIPING MEET REQUIREMENTS.
- INSTALL DUCTWORK AND PIPING PARALLEL TO BUILDING COLUMN LINES UNLESS OTHERWISE SHOWN OR NOTED.
- OVERHEAD HANGERS AND SUPPORTERS FOR EQUIPMENT, DUCTWORK, AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF EXCEPT WHERE CONCRETE INSERTS IN CONCRETE SLABS ARE ALLOWED BY THE SPECIFICATIONS.
- COORDINATE LOCATION OF EQUIPMENT SUPPORTERS WITH LOCATION OF EQUIPMENT ACCESS PANELS/DOORS TO ENABLE SERVICE OF EQUIPMENT AND/OR FILTER REPLACEMENT.
- SEAL PENETRATIONS THROUGH THE BUILDING COMPONENTS IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. FIREPROOF PENETRATIONS THROUGH FIRE RATED COMPONENTS IN ACCORDANCE WITH U.L. REQUIREMENTS.

MECHANICAL SHEET INDEX

SHEET No.	DESCRIPTION
M.000	MECHANICAL LEGEND, SYMBOLS AND SHEET INDEX
M.100	SANITARY, STORM & VENT PIPING FIRST FLOOR PLAN - BLDG #5
M.101	SANITARY, STORM & VENT PIPING SECOND FLOOR PLAN - BLDG #5
M.102	SANITARY, STORM & VENT PIPING THIRD FLOOR PLAN - BLDG #5
M.103	DOMESTIC WATER AND GAS PIPING FIRST FLOOR PLAN - BLDG #5
M.104	DOMESTIC WATER AND GAS PIPING SECOND FLOOR PLAN - BLDG #5
M.105	DOMESTIC WATER AND GAS PIPING THIRD FLOOR PLAN - BLDG #5
M.200	HVAC FIRST FLOOR PLAN - BLDG #5
M.201	HVAC SECOND FLOOR PLAN - BLDG #5
M.202	HVAC THIRD FLOOR PLAN - BLDG #5
M.300	MECHANICAL ROOF PLAN - BLDG #5
M.400	MECHANICAL SCHEDULES
M.401	MECHANICAL DETAILS
M.500	MECHANICAL SPECIFICATIONS

NOT ALL SYMBOLS ARE USED ON THIS PROJECT

TROY CROSSING  
APARTMENTS  
TROY, MICHIGAN

MECHANICAL LEGENDS, SYMBOLS AND SHEET INDEX

PROJECT NUMBER MEP # 207-18	ISSUE		DESCRIPTION	
	DATE	DATE	DESCRIPTION	DESCRIPTION
DESIGN: J.M. DRAWN: J.K.	11-29-2021	100%	OWNER REVIEW	
	12-2-21		COORDINATION	
	12-23-21		PERMIT	

SHEET  
M.000



MEP Engineers LLC

Mechanical | Electrical | Plumbing | Energy

380 North Main Street  
Clawson, MI 48017  
Tel: (248) 488-9822 Fax: (248) 488-9811  
Web: www.mepmi.com Email: mep@mepmi.com



PLUMBING GENERAL NOTES:

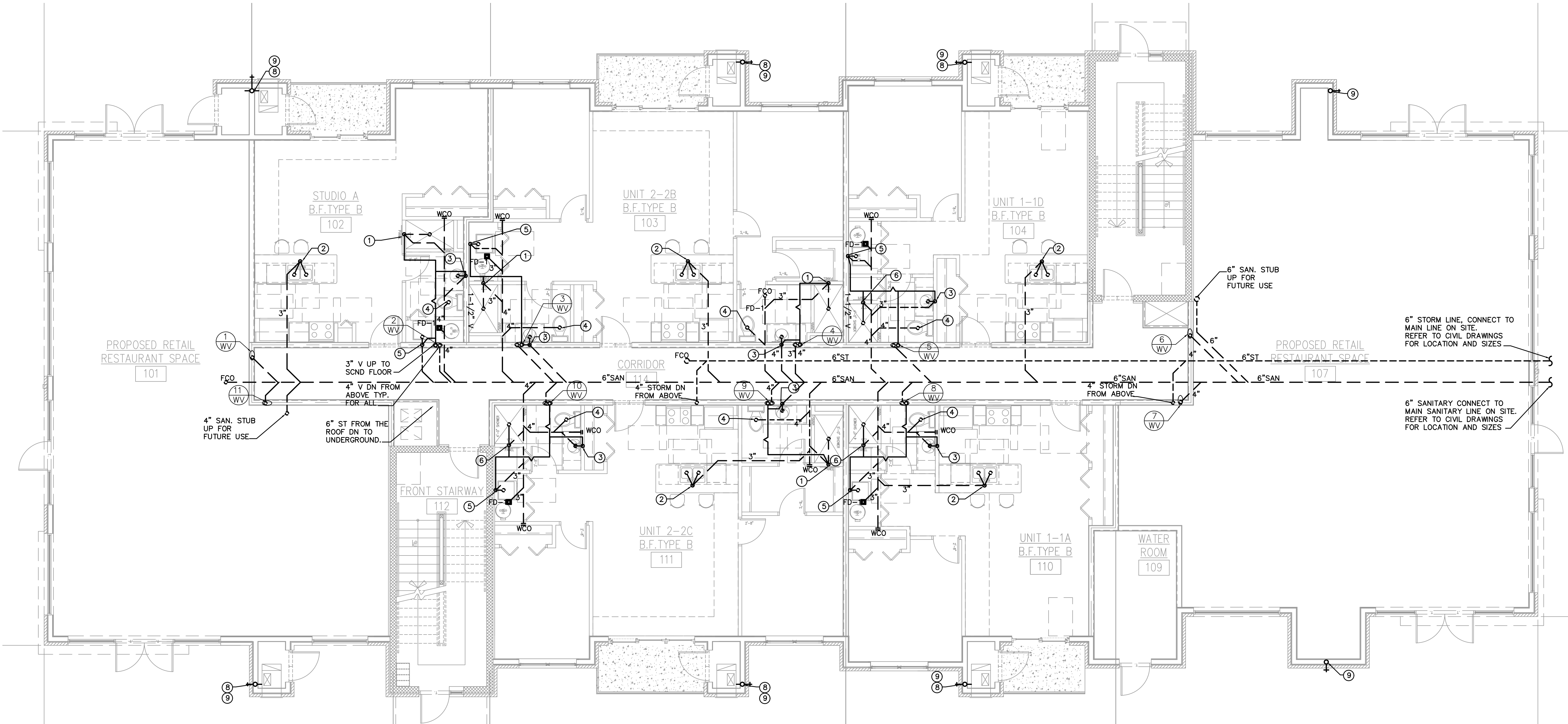
- 1. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF THE WORK. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE TO OBSERVE THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- 2. PROVIDE A CONSTRUCTION RECORD SET OF "AS-BUILT" DOCUMENTS TO THE ARCHITECT REFLECTING ANY VARIANCES OF INSTALLED PIPING LOCATIONS OR EQUIPMENT CONTRARY TO THE CONSTRUCTION DOCUMENTS, REFER TO SPECIFICATIONS.
- 3. PROVIDE TO THE ARCHITECT A COPY OF INSPECTION REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS, REFER TO SPECIFICATIONS.
- 4. INSTALLATION SHALL COMPLY WITH LEGALLY CONSTITUTED CODES AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
- 5. PLANS AND SPECIFICATIONS GOVERN WHERE THEY EXCEED CODE REQUIREMENTS.
- 6. VERIFY LOCATION AND DEPTH OF UTILITIES AT POINTS OF CONNECTION BEFORE START OF PIPING INSTALLATION.
- 7. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES.

- 8. DO NOT SCALE FLOOR PLANS FOR EXACT HORIZONTAL LOCATION OF PIPE ROUTING.
- 9. INSTALL CONCEALED PIPING TIGHT TO THE STRUCTURE AND AS HIGH AS POSSIBLE. INSTALL EXPOSED PIPING TIGHT TO THE STRUCTURE, WALL OR CEILING AND AS HIGH AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS.
- 10. PIPING IN FINISHED AREAS SHALL BE ROUTED CONCEALED; EXPOSED PIPING, WHERE NECESSARY, SHALL BE ROUTED AS HIGH AS POSSIBLE AND TIGHT TO WALLS.
- 11. INSTALL NO PLASTIC PIPE OF ANY KIND ABOVE SLAB INSIDE THE BUILDING. INSTALL NO PLASTIC PIPE IN THE CEILING RETURN AIR PLENUM.
- 12. COORDINATE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- 13. COORDINATE PIPE ROUTING AWAY FROM ELECTRICAL PANELS. DO NOT INSTALL PIPING OVER ELECTRICAL PANELS.
- 14. COORDINATE ALL ROOF PENETRATIONS WITH OTHER TRADES. MAINTAIN 25' MINIMUM CLEARANCE FROM ALL AIR INTAKES. MAINTAIN 2' CLEARANCE FROM ALL OTHER EQUIPMENT.
- 15. PROVIDE "HEAVY-DUTY" NO-HUB COUPLINGS ON SANITARY PIPING 3" AND LARGER, SOIL STACKS 4" AND LARGER AND CONNECTIONS TO SOIL STACKS. SEE DIVISION 22 SPECIFICATION SECTION "SANITARY DRAINAGE AND VENT AND PIPING SPECIALTIES" FOR MORE INFORMATION.

- 16. PROVIDE TRANSITION ADAPTER COUPLINGS FOR CONNECTION OF PVC DWV TO CAST IRON SANITARY, WASTE AND VENT PIPE AT SLAB ON GRADE. SEE DIVISION 22 SPECIFICATION SECTION "SANITARY DRAINAGE AND VENT PIPING AND SPECIALTIES" FOR MORE INFORMATION.
- 17. VERIFY EXISTING EQUIPMENT, INCLUDING ACCESSORIES, IS NOT DAMAGED AND IS IN GOOD WORKING ORDER. REPORT ANY DEFICIENCIES TO THE ARCHITECT.
- 18. INSULATE LAST 25 LINEAL FEET OF NEW AND EXISTING VENT PIPING INSIDE BUILDING PER SPECIFICATIONS AT VENT THRU ROOF PENETRATIONS WITHIN SCOPE.
- 19. RUN SANITARY LINE WITH 1/8" SLOPE.

PLUMBING KEY NOTES:

- 1. SHOWER (SH-1) : 1-1/2" WASTE DN & 1-1/2" V UP.
- 2. KITCHEN SINK (KS-1) : 1-1/2" WASTE DN TO GARBAGE DISPOSER & 1-1/2" V UP, TERMINATE W/ AND ADMITTANCE VENT (STUDOR) UNDER COUNTER
- 3. LAVATORY (LAV-1) : 1-1/2" WASTE DN & 1-1/2" V UP.
- 4. WATER CLOSET (WC-1) : 4" WASTE UP.
- 5. WASHER : 2" WASTE DN & 2" V UP.
- 6. SHOWER (SH-2) : 1-1/2" WASTE DN & 1-1/2" V UP
- 7. BATHTUB (BT-1) : 1-1/2" WASTE DN & 1-1/2" V UP.
- 8. RUN 3/4" CONDENSATE DRAIN FROM HVAC TO 1-1/4" LINE DN IN WALL.
- 9. RUN 1-1/4" CONDENSATE DRAIN LINE DN, OFFSET LINE AS REQUIRED & SPILL 6" ABOVE GRADE.



FIRST FLOOR PLAN - SANITARY & VENT PIPING-BLDG #5  
SCALE: 3/16" = 1'-0"



TROY CROSSING  
APARTMENTS  
TROY, MICHIGAN

SANITARY + VENT PIPING FIRST FLOOR PLAN BLDG # 5

PROJECT NUMBER		ISSUE	
MEP # 207-18		DATE	DESCRIPTION
		11-29-2021	100% OWNER REVIEW
		12-2-21	COORDINATION
		12-23-21	PERMIT
DESIGN: JM.			
DRAWN: JK.			

SHEET

M.100

MEP Engineers LLC

Mechanical | Electrical | Plumbing | Energy

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MEP



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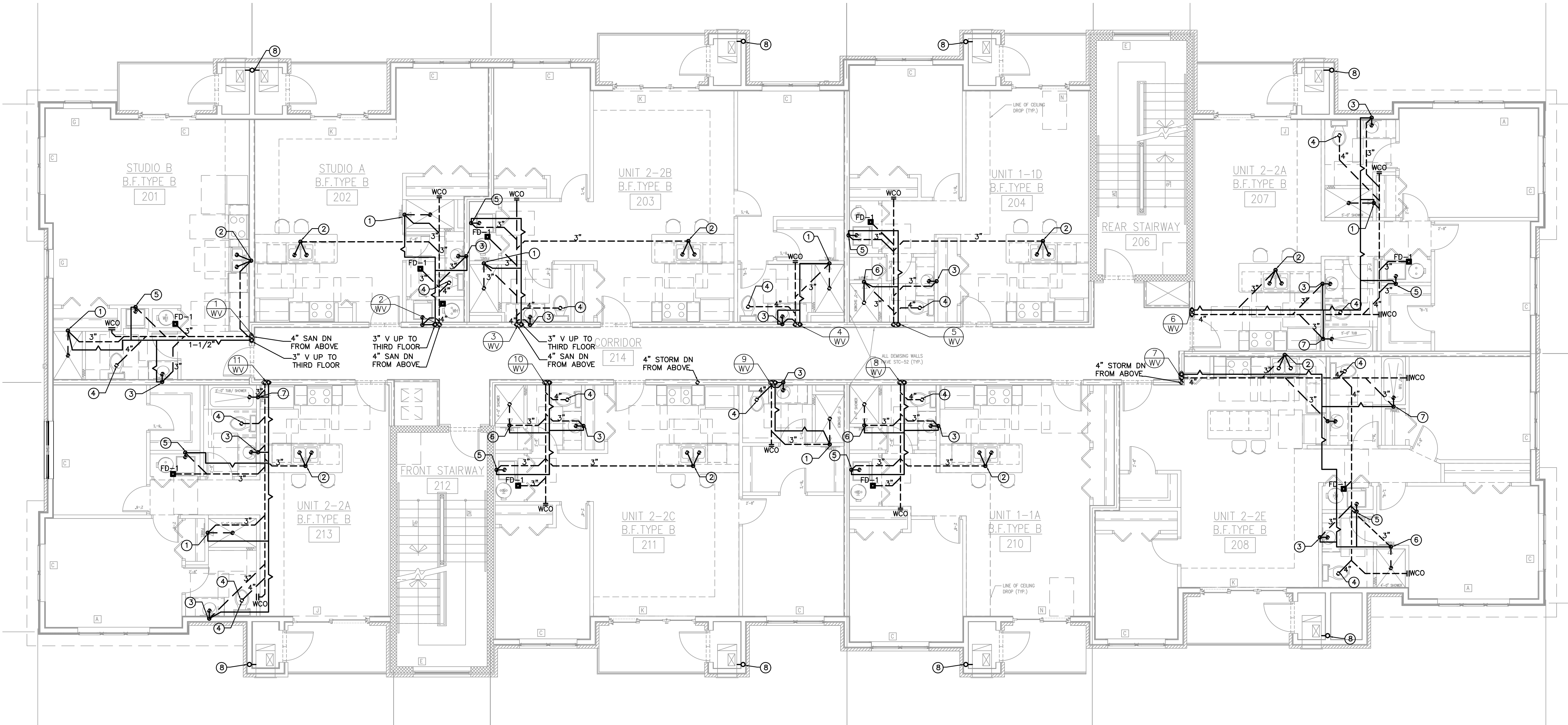
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- 2. PROVIDE A CONSTRUCTION RECORD SET OF "AS-BUILT" DOCUMENTS TO THE ARCHITECT REFLECTING ANY VARIANCES OF INSTALLED PIPING LOCATIONS OR EQUIPMENT CONTRARY TO THE CONSTRUCTION DOCUMENTS, REFER TO SPECIFICATIONS.
- 3. PROVIDE TO THE ARCHITECT A COPY OF INSPECTION REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS, REFER TO SPECIFICATIONS.
- 4. INSTALLATION SHALL COMPLY WITH LEGALLY CONSTITUTED CODES AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
- 5. PLANS AND SPECIFICATIONS GOVERN WHERE THEY EXCEED CODE REQUIREMENTS.
- 6. VERIFY LOCATION AND DEPTH OF UTILITIES AT POINTS OF CONNECTION BEFORE START OF PIPING INSTALLATION.
- 7. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES.

- 8. DO NOT SCALE FLOOR PLANS FOR EXACT HORIZONTAL LOCATION OF PIPE ROUTING.
- 9. INSTALL CONCEALED PIPING TIGHT TO THE STRUCTURE AND AS HIGH AS POSSIBLE. INSTALL EXPOSED PIPING TIGHT TO THE STRUCTURE, WALL OR CEILING AND AS HIGH AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS.
- 10. PIPING IN FINISHED AREAS SHALL BE ROUTED CONCEALED; EXPOSED PIPING, WHERE NECESSARY, SHALL BE ROUTED AS HIGH AS POSSIBLE AND TIGHT TO WALLS.
- 11. INSTALL NO PLASTIC PIPE OF ANY KIND ABOVE SLAB INSIDE THE BUILDING. INSTALL NO PLASTIC PIPE IN THE CEILING RETURN AIR PLENUM.
- 12. COORDINATE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- 13. COORDINATE PIPE ROUTING AWAY FROM ELECTRICAL PANELS. DO NOT INSTALL PIPING OVER ELECTRICAL PANELS.
- 14. COORDINATE ALL ROOF PENETRATIONS WITH OTHER TRADES. MAINTAIN 25' MINIMUM CLEARANCE FROM ALL AIR INTAKES. MAINTAIN 2' CLEARANCE FROM ALL OTHER EQUIPMENT.
- 15. PROVIDE "HEAVY-DUTY" NO-HUB COUPLINGS ON SANITARY PIPING 3" AND LARGER, SOIL STACKS 4" AND LARGER AND CONNECTIONS TO SOIL STACKS. SEE DIVISION 22 SPECIFICATION SECTION "SANITARY DRAINAGE AND VENT AND PIPING SPECIALTIES" FOR MORE INFORMATION.

- 16. PROVIDE TRANSITION ADAPTER COUPLINGS FOR CONNECTION OF PVC DWV TO CAST IRON SANITARY, WASTE AND VENT PIPE AT SLAB ON GRADE. SEE DIVISION 22 SPECIFICATION SECTION "SANITARY DRAINAGE AND VENT PIPING AND SPECIALTIES" FOR MORE INFORMATION.
- 17. VERIFY EXISTING EQUIPMENT, INCLUDING ACCESSORIES, IS NOT DAMAGED AND IS IN GOOD WORKING ORDER. REPORT ANY DEFICIENCIES TO THE ARCHITECT.
- 18. INSULATE LAST 25 LINEAL FEET OF NEW AND EXISTING VENT PIPING INSIDE BUILDING PER SPECIFICATIONS AT VENT THRU ROOF PENETRATIONS WITHIN SCOPE.
- 19. RUN SANITARY LINE WITH 1/8" SLOPE.

PLUMBING KEY NOTES:

- 1. SHOWER (SH-1) : 1-1/2" WASTE DN & 1-1/2" V UP.
- 2. KITCHEN SINK (KS-1) : 1-1/2" WASTE DN TO GARBAGE DISPOSER & 1-1/2" V UP, TERMINATE W/ AND ADMITTANCE VENT (STUDOR) UNDER COUNTER
- 3. LAVATORY (LAV-1) : 1-1/2" WASTE DN & 1-1/2" V UP.
- 4. WATER CLOSET (WC-1) : 4" WASTE UP.
- 5. WASHER : 2" WASTE DN & 2" V UP.
- 6. SHOWER (SH-2) : 1-1/2" WASTE DN & 1-1/2" V UP
- 7. BATHTUB (BT-1) : 1-1/2" WASTE DN & 1-1/2" V UP.
- 8. RUN 3/4" CONDENSATE DRAIN FROM HVAC TO 1-1/4" LINE DN IN WALL.



SECOND FLOOR PLAN - SANITARY & VENT PIPING-BLDG #5  
SCALE: 3/16" = 1'-0"



TROY CROSSING  
APARTMENTS  
TROY, MICHIGAN

SANITARY + VENT PIPING SECOND FLOOR PLAN BLDG # 5

PROJECT NUMBER	ISSUE	DATE	DESCRIPTION
MEP # 207-18		11-29-2021	100% OWNER REVIEW
		12-2-21	COORDINATION
		12-23-21	PERMIT
DESIGN: J.M.			
DRAWN: J.K.			

SHEET  
M.101

MEP Engineers LLC

Mechanical | Electrical | Plumbing | Energy

380 North Main Street  
Clawson, MI 48017

Tel: (248) 488-9822 Fax: (248) 488-9811  
Web: www.mepmi.com Email: mep@mepmi.com

MEP



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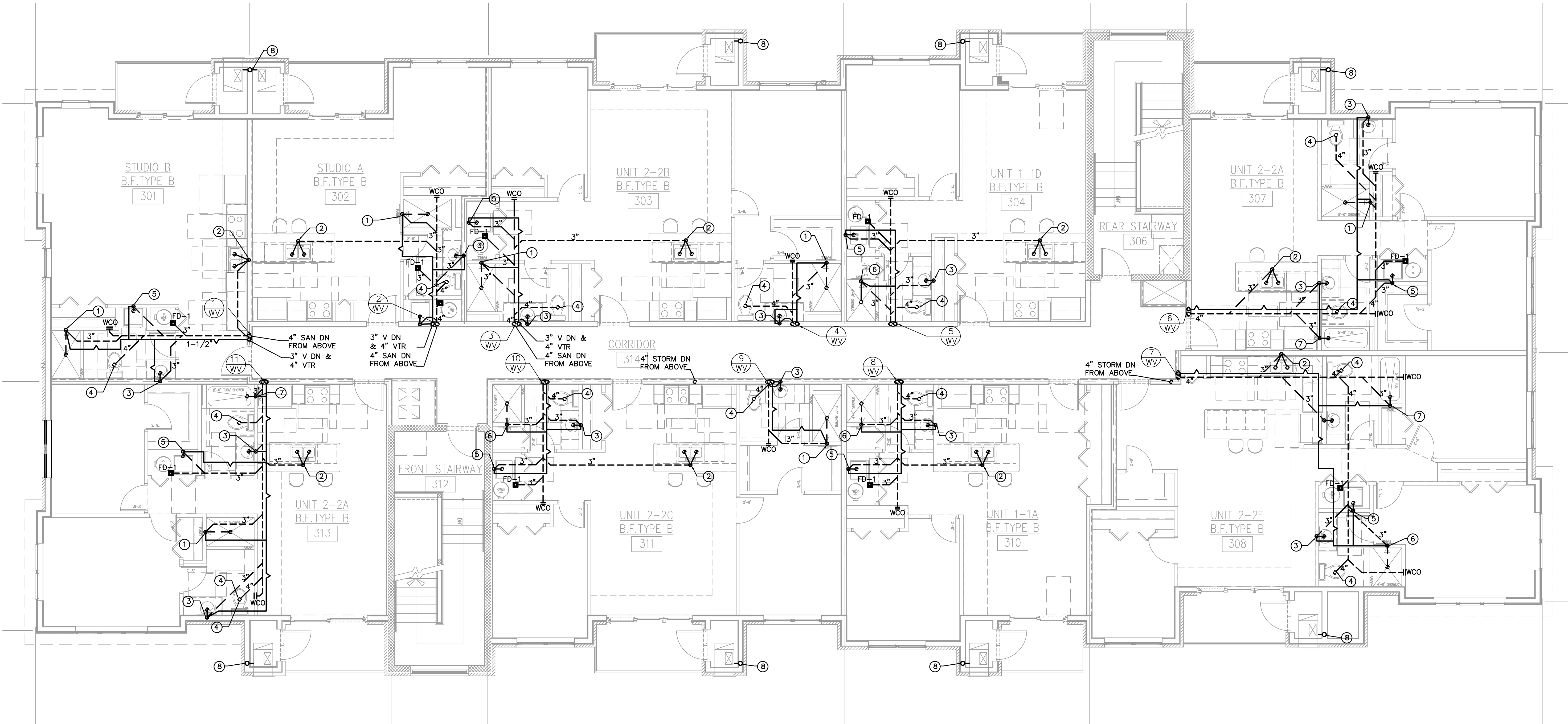
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- 7. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES.

- 8. DO NOT SCALE FLOOR PLANS FOR EXACT HORIZONTAL LOCATION OF PIPE ROUTING.
- 9. INSTALL CONCEALED PIPING TIGHT TO THE STRUCTURE AND AS HIGH AS POSSIBLE. INSTALL EXPOSED PIPING TIGHT TO THE STRUCTURE, WALL OR CEILING AND AS HIGH AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS.
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- 6. SHOWER (SH-2) : 1-1/2" WASTE DN & 1-1/2" V UP
- 7. BATHTUB (BT-1) : 1-1/2" WASTE DN & 1-1/2" V UP.
- 8. RUN 3/4" CONDENSATE DRAIN FROM HVAC TO 1-1/4" LINE DN IN WALL.



THIRD FLOOR PLAN - SANITARY & VENT PIPING-BLDG #5  
SCALE: 3/16" = 1'-0"

**MEP Engineers LLC**  
Mechanical | Electrical | Plumbing | Energy

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**TROY CROSSING APARTMENTS**  
TROY, MICHIGAN

**SANITARY + VENT PIPING THIRD FLOOR PLAN BLDG # 5**

PROJECT NUMBER	ISSUE	DATE	DESCRIPTION
MEP # 207-18	11-29-2021	100% OWNER REVIEW	
	12-2-21	COORDINATION	
	12-23-21	PERMIT	
DESIGN: <b>JM.</b>			
DRAWN: <b>JK.</b>			

SHEET

**M.102**



PLUMBING GENERAL NOTES:

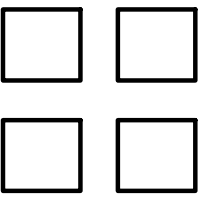
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- WATER HAMMER ARRESTORS SHALL BE SIZE "A" UNLESS NOTED OTHERWISE.
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PLUMBING KEY NOTES:

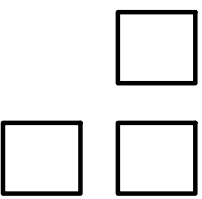
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- 3/4" GAS DN TO HVAC.
- WH-1 : 40 GAL. , 1/2" GAS DN.
- 1/2" GAS DN TO GAS RANGE.

DETAIL B:



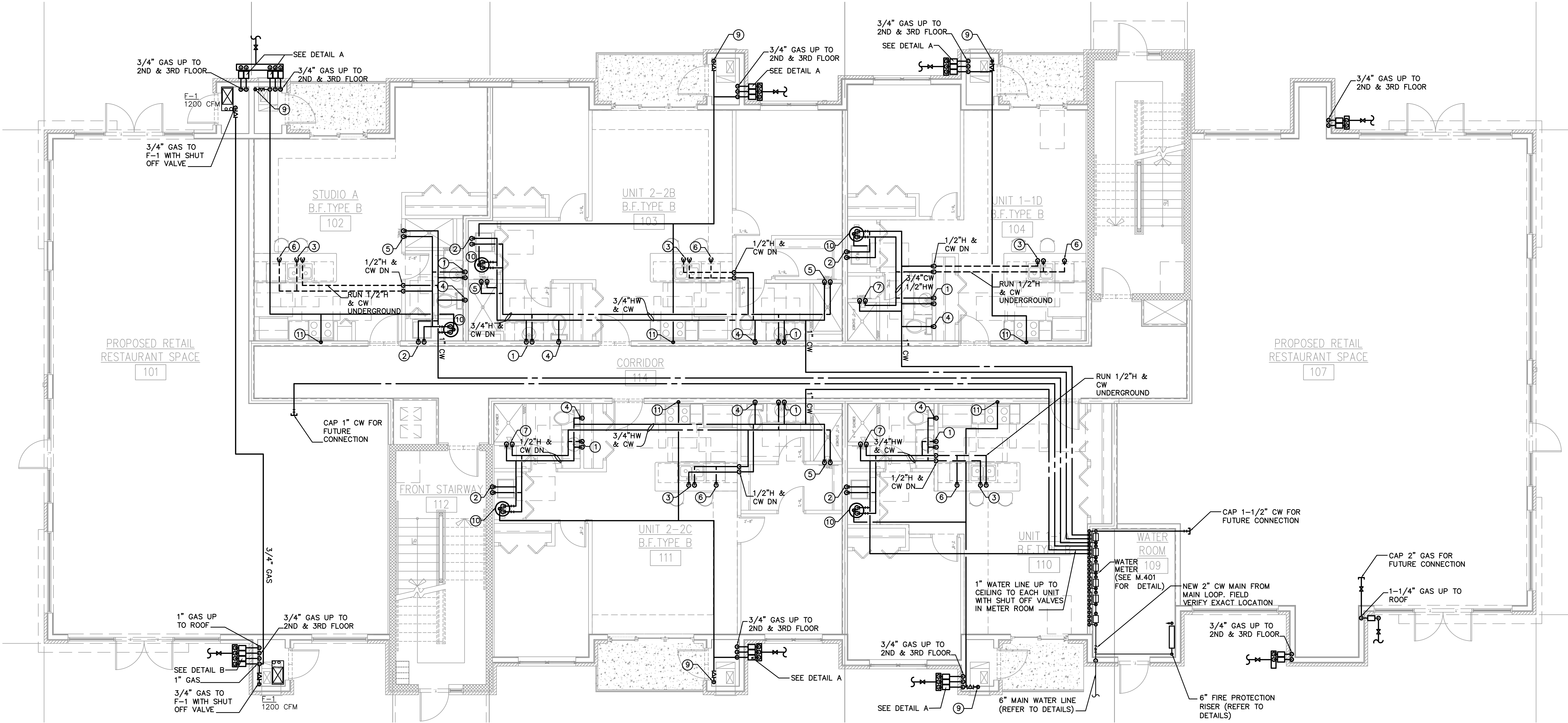
ELEVATION OF TYPICAL 4 GAS METERS ARRANGEMENT ALONG WALL  
NO SCALE

DETAIL A:



ELEVATION OF TYPICAL 3 GAS METERS ARRANGEMENT ALONG WALL  
NO SCALE

NOTE: GAS METERS ARE TO BE INSTALLED  
AS CLOSE TO CORNERS AS POSSIBLE.



FIRST FLOOR PLAN - DOMESTIC WATER & GAS PIPING-BLDG #5

SCALE: 3/16" = 1'-0"

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Web: www.mepmi.com Email: mep@mepmi.com

STATE OF MICHIGAN  
JOSEPH A. MALKOUN  
ENGINEER  
No. 42833  
REGISTERED PROFESSIONAL ENGINEER

TROY CROSSING  
APARTMENTS  
TROY, MICHIGAN

DOMESTIC WATER + GAS PIPING FIRST FLOOR PLAN BLDG # 5

PROJECT NUMBER	ISSUE	DATE	DESCRIPTION
MEP # 207-18	11-29-2021	100% OWNER REVIEW	
	12-2-21	COORDINATION	
	12-23-21	PERMIT	
DESIGN: J.M.			
DRAWN: J.K.			

SHEET

M.103

P:\AA (2021) Projects\2107-18) Troy Crossing Apartments, Building 5\Production\CAD Files\M.103.dwg

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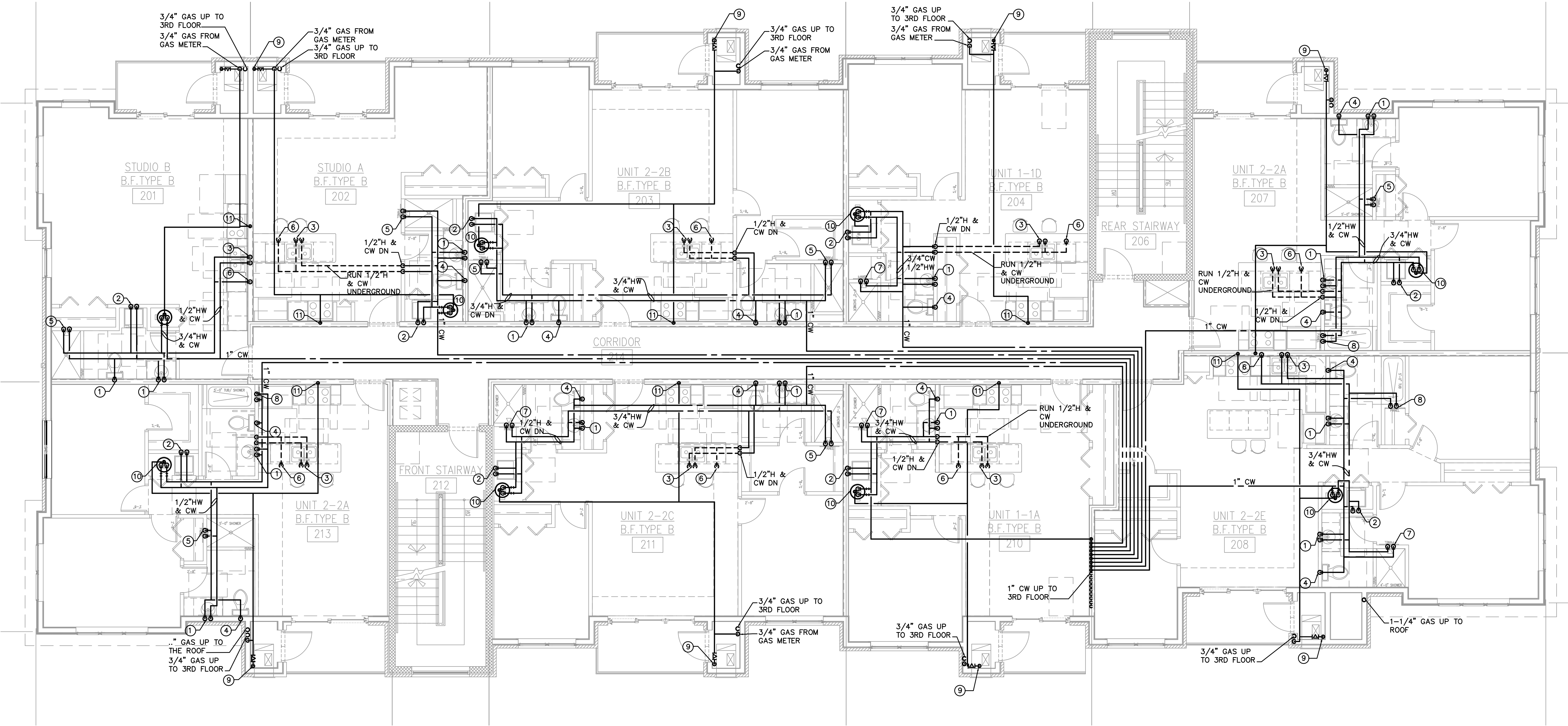
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SECOND FLOOR PLAN - DOMESTIC WATER & GAS PIPING-BLDG #5  
SCALE: 3/16" = 1'-0"

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**TROY CROSSING APARTMENTS**  
TROY, MICHIGAN

**DOMESTIC WATER + GAS PIPING SECOND FLOOR PLAN BLDG # 5**

PROJECT NUMBER	ISSUE	DATE	DESCRIPTION
MEP # 207-18	11-29-2021	100% OWNER REVIEW	
	12-2-21	COORDINATION	
	12-23-21	PERMIT	
DESIGN: <b>JM.</b>			
DRAWN: <b>JK</b>			

SHEET

**M.104**



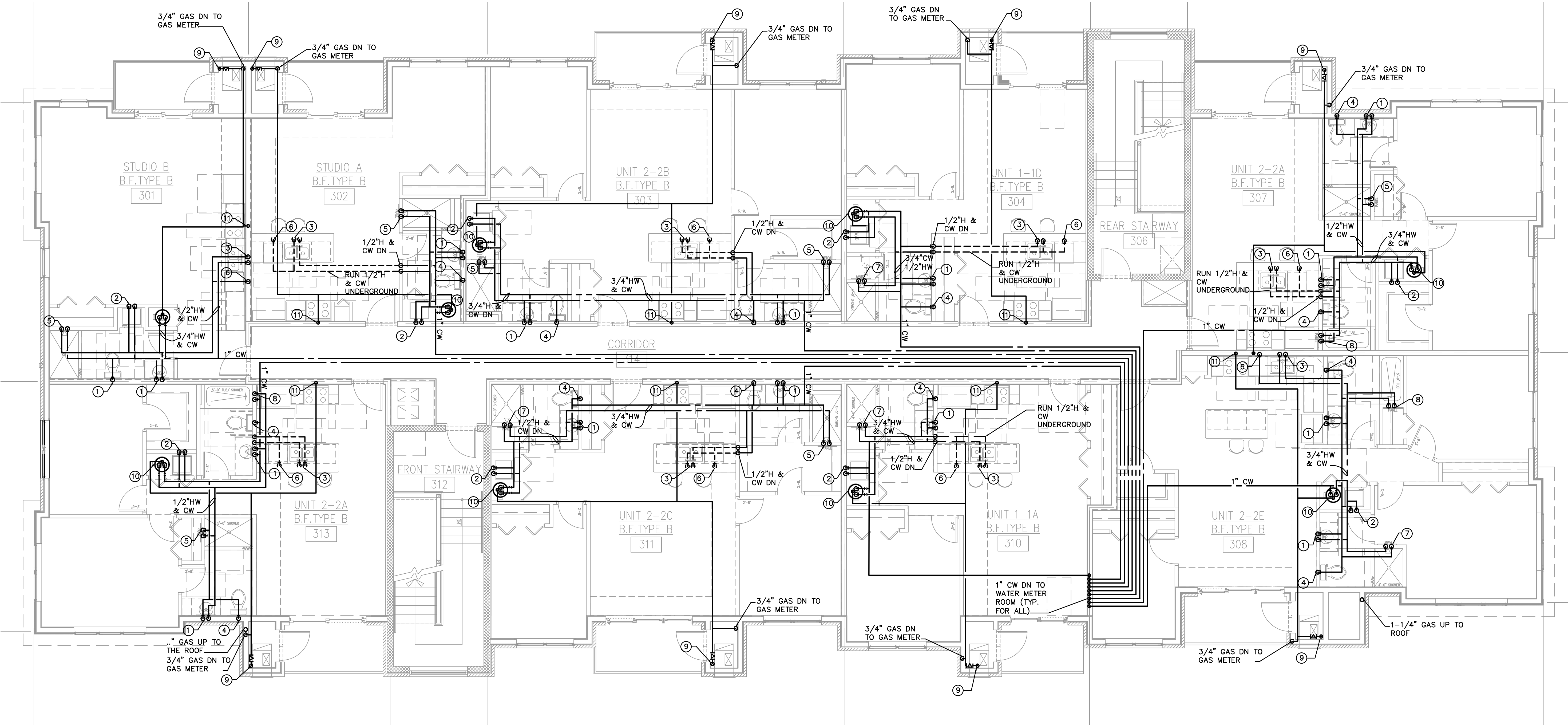
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TROY, MICHIGAN

DOMESTIC WATER + GAS PIPING THIRD FLOOR PLAN BLDG # 5

PROJECT NUMBER	DATE	ISSUE DESCRIPTION
MEP # 207-18	11-29-2021	100% OWNER REVIEW
	12-2-21	COORDINATION
	12-23-21	PERMIT
DESIGN: JM.		
DRAWN: JK.		

SHEET

M.105



MECHANICAL GENERAL NOTES:

1. COORDINATE THE INSTALLATION OF THE MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC. ANY MODIFICATIONS REQUIRED DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.

2. ALL NEW MECHANICAL EQUIPMENT SHOWN ON THE MECHANICAL PLANS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED.

3. REFER TO ARCHITECTURAL DRAWINGS FOR RELATED CONSTRUCTION DETAILS AS APPLICABLE TO THE HVAC SYSTEM. VERIFY CHASES AND PENETRATIONS SHOWN ON ARCHITECTURAL DRAWINGS THAT ARE INTENDED FOR DUCTWORK AND PIPING MEET REQUIREMENTS.

4. OVERHEAD HANGERS AND SUPPORTERS FOR EQUIPMENT, DUCTWORK, AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF EXCEPT WHERE CONCRETE INSERTS IN CONCRETE SLABS ARE ALLOWED BY THE SPECIFICATIONS.

5. SEAL PENETRATIONS THROUGH THE BUILDING COMPONENTS IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. FIREPROOF PENETRATIONS THROUGH FIRE RATED COMPONENTS IN ACCORDANCE WITH U.L. REQUIREMENTS.

6. COORDINATE THE EXACT MOUNTING SIZE AND FRAME TYPE OF DIFFUSERS, REGISTERS, AND GRILLES WITH THE SUPPLIER TO MEET THE CEILING, WALL, AND DUCT INSTALLATION REQUIREMENTS.

7. ADJUST LOCATION OF CEILING DIFFUSERS, REGISTERS, AND GRILLES AS REQUIRED TO ACCOMMODATE FINAL CEILING GRID AND LIGHTING LOCATIONS.
8. PROVIDE A PREFABRICATED RECTANGULAR/ROUND BRANCH DUCT TAKEOFF FITTING WITH MANUAL BALANCING DAMPER AND LOCKING QUADRANT FOR BRANCH DUCT CONNECTIONS AND TAKE-OFFS TO INDIVIDUAL DIFFUSERS, REGISTERS AND GRILLES.

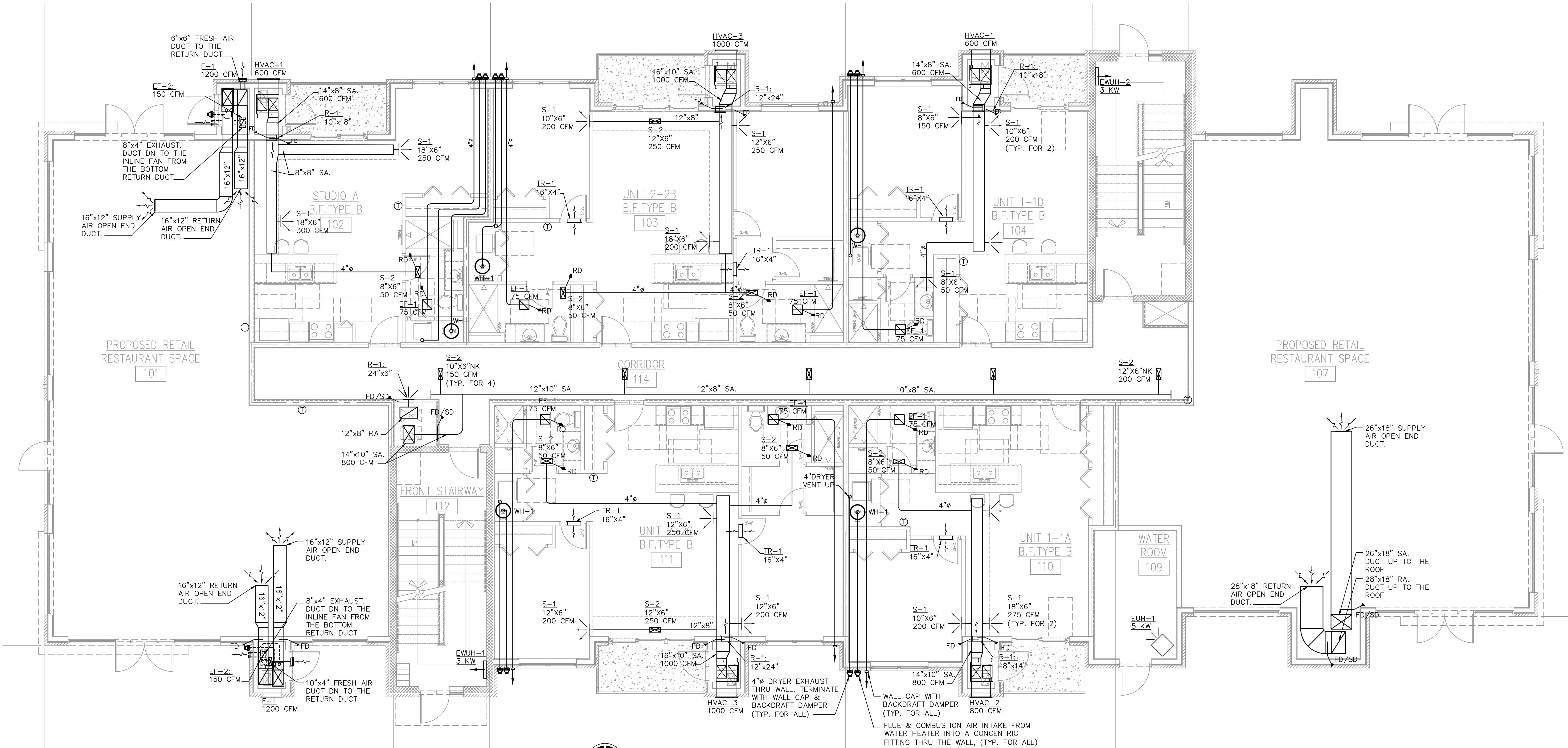
9. BRANCH DUCTWORK TO AIR OUTLETS SHALL BE SAME SIZE AS OUTLET NECK SIZE UNLESS OTHERWISE NOTED.

10. REFER TO SPECIFICATIONS FOR DUCTWORK AND PIPING INSULATION REQUIREMENTS. DUCT SIZES ON MECHANICAL PLANS INDICATE CLEAR INSIDE AIRFLOW DIMENSIONS.

11. FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-0" IN LENGTH AND SHALL BE INSTALLED AND SUPPORTED TO AVOID SHARP BENDS AND SAGGING. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

12. IN EXPOSED AREA (NO CEILING). PROVIDE PREFABRICATED SPIRAL ROUND DUCT OF SIZES AS SHOWN ON DWG UNLESS OTHERWISE NOTED.

13. COORDINATE LOCATION OF EQUIPMENT SUPPORTERS WITH LOCATION OF EQUIPMENT ACCESS PANELS/DOORS TO ENABLE SERVICE OF EQUIPMENT AND/OR FILTER REPLACEMENT.



FIRST FLOOR PLAN - HVAC PLAN - BLDG #5  
SCALE: 3/16" = 1'-0"

MEP Engineers LLC

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TROY CROSSING  
APARTMENTS  
TROY, MICHIGAN

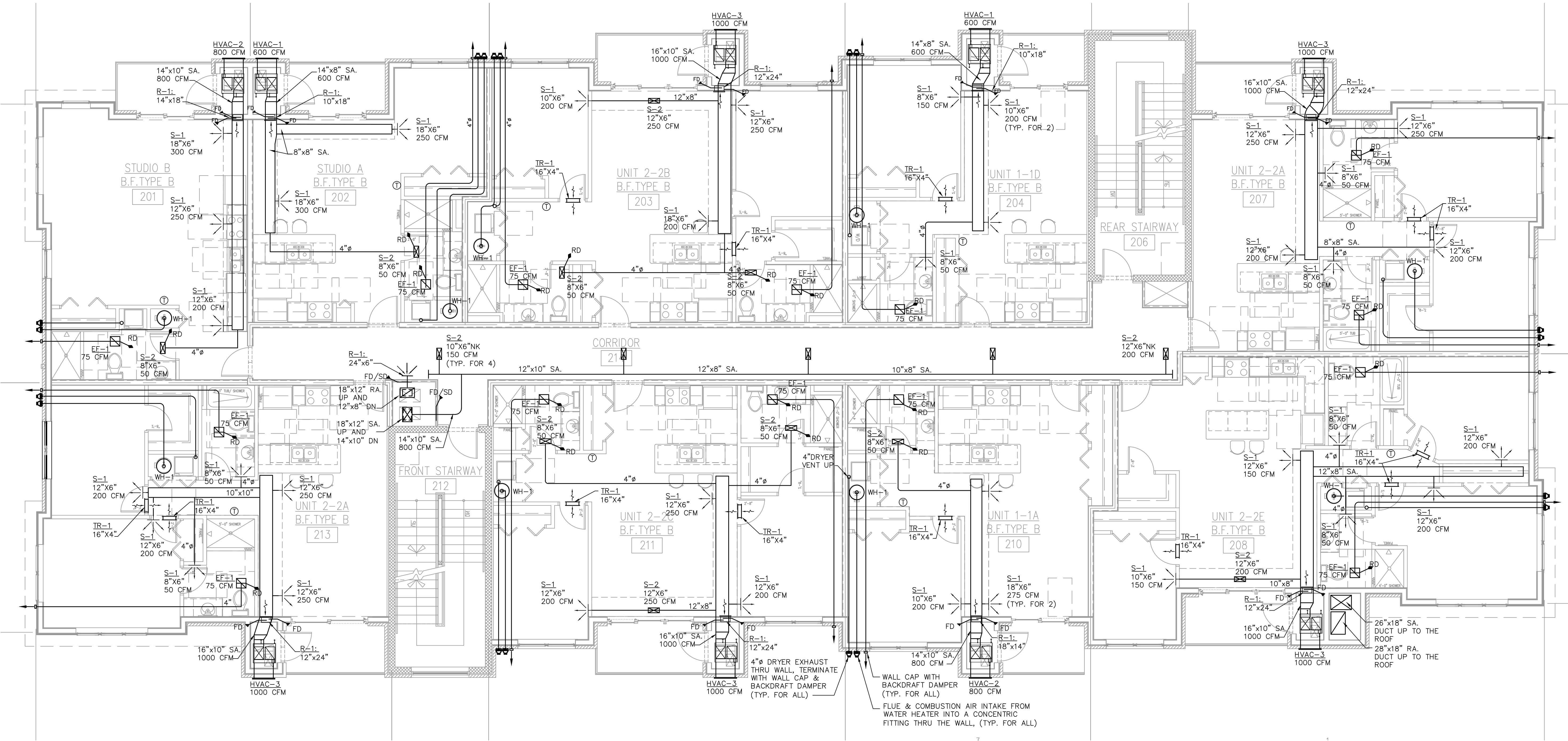
HVAC FIRST FLOOR PLAN BLDG # 5

PROJECT NUMBER	ISSUE	DATE	DESCRIPTION
MEP # 207-18	11-29-2021	100% OWNER REVIEW	
	12-2-21	COORDINATION	
	12-23-21	PERMIT	
DESIGN: J.M.			
DRAWN: J.K.			
SHEET			
M.200			



MECHANICAL GENERAL NOTES:

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SECOND FLOOR PLAN - HVAC PLAN - BLDG #5  
SCALE: 3/16" = 1'-0"

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**TROY CROSSING APARTMENTS**  
TROY, MICHIGAN

**HVAC SECOND FLOOR PLAN BLDG # 5**

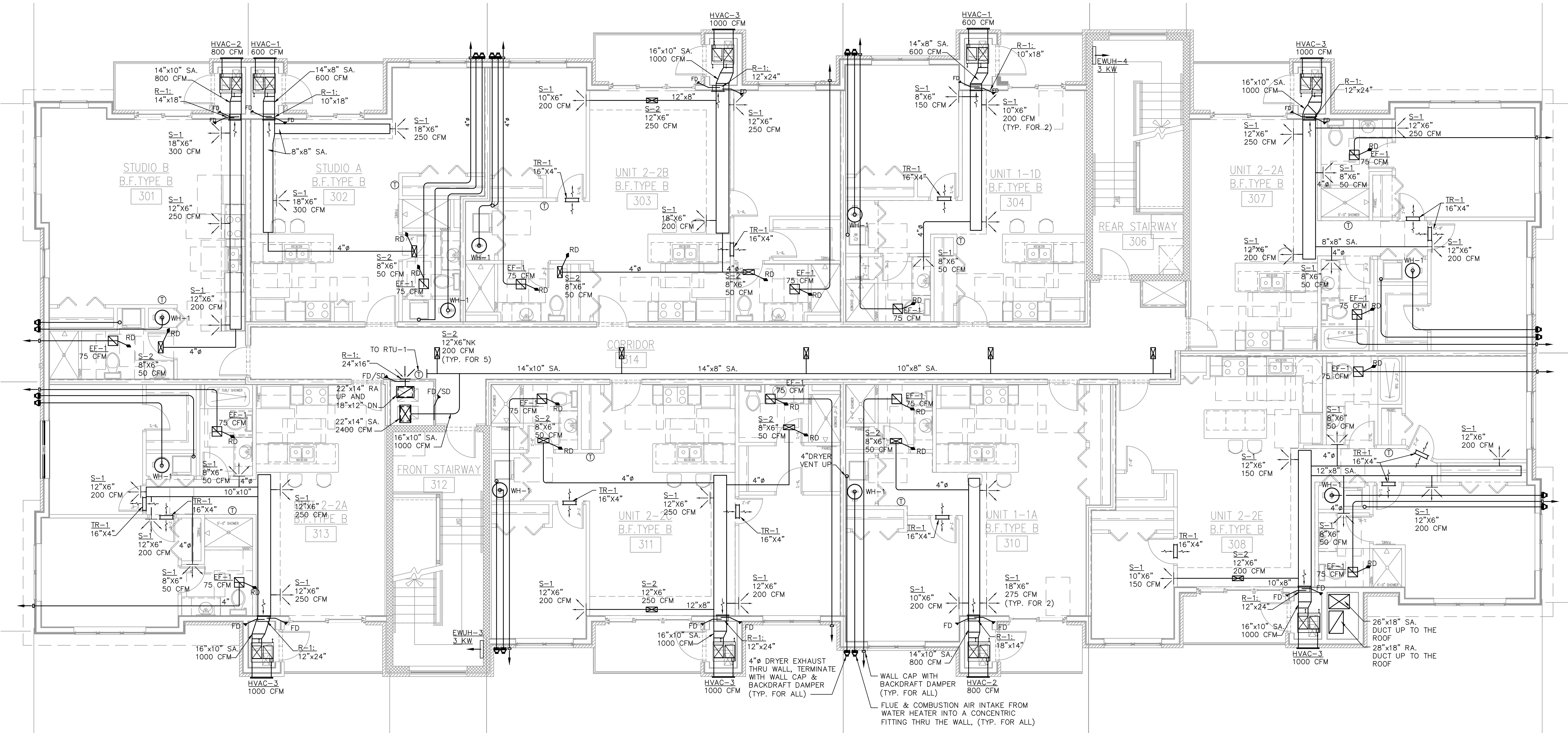
PROJECT NUMBER	ISSUE	DATE	DESCRIPTION
MEP # 207-18	11-29-2021	100% OWNER REVIEW	
	12-2-21	COORDINATION	
	12-23-21	PERMIT	
DESIGN: <b>JM.</b>			
DRAWN: <b>JK</b>			

SHEET  
**M.201**

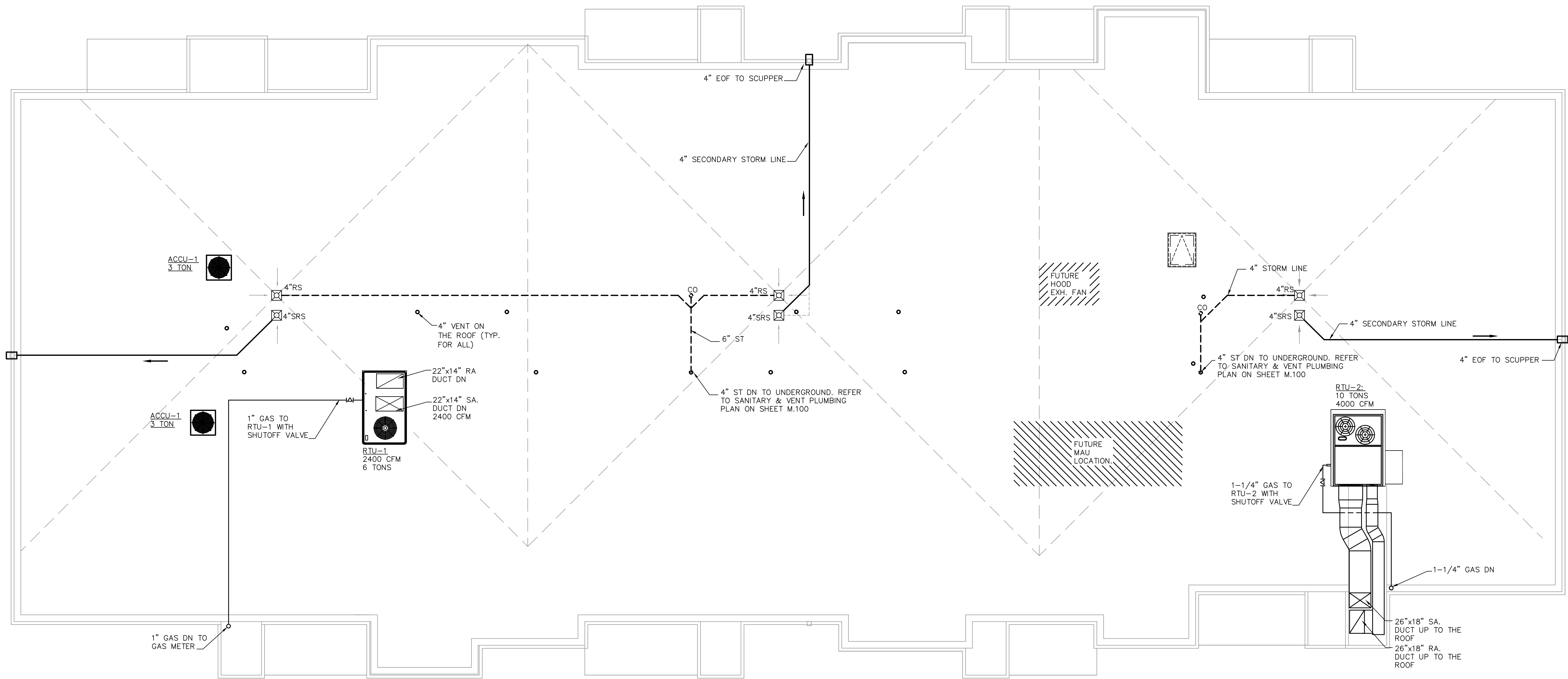


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MECHANICAL ROOF PLAN - BLDG #5

SCALE: 3/16" = 1'-0"



TROY CROSSING APARTMENTS  
TROY, MICHIGAN

MECHANICAL ROOF PLAN BLDG # 5

PROJECT NUMBER MEP # 207-18	ISSUE	
	DATE	DESCRIPTION
	11-29-2021	100% OWNER REVIEW
	12-2-21	COORDINATION
DESIGN: J.M.	12-23-21	PERMIT
DRAWN: J.K.		

SHEET

M.300



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NATURAL GAS FURNACE SCHEDULE EFFICIENCY 96%																
SNO.	TAG	MANUFACTURER & MODEL NUMBER	TYPE	SERVICE	FLOW ( CFM )	OA (CFM)	BLOWOR MOTOR (HP)	BLOWER MOTOR (RPM)	ESP	DX COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)		ELECTRICAL VOLT/PH/HZ	MCA	MOCP	NOTES /ACCESSORIES
											INPUT	OUTPUT				
1	F-1	59TP6A060E1712	VERTICAL UPFLOW	RETAIL	1200	150	1/2	HIGH	0.5	36	60	58	115-1-60	9.7	15	A,B,C,D,E
NOTE:																
A PROVIDE DIGITAL WALL T-STAT, FILTERS, DX COOLING COIL, REFRIG & LINE SET, BLOWER SPEED HIGH.																
B VERIFY POWER REQUIREMENT FOR ALL FURNACES WITH SHOP DRAWING SUBMITTAL.																
C PROVIDE COOLING COIL CASING & CAPACITY MATCH WITH AIR COOLED CONDENSING UNIT.																
D PROVIDE COMBUSTION AIR / VENT PIPE FOR CONCENTRIC VENT ( REFER TO INSTALLATION MANUAL FOR EXACT PIPE SIZE AND EQUIVALENT LENGTH)																
E UP-FLOW AIR SUPPLY FURNACE WITH STAINLESS STEEL HEAT-EXCHANGER AND SIDE RETURN.																
F PROVIDE A SMOKE DAMPER AS PER CODE.																

AIR COOLED CONDENSING UNIT SCHEDULE-13 SEER												
SNO.	TAG	MANUFACTURER & MODEL NUMBER	SERVICE	NOMINAL CAPACITY (MBH)	NET CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	NUMBER OF FANS	MINIMUM MCA	MAX FUSE	VOLTS/PH/HZ	OPERATING WEIGHT (LBS)	NOTES /ACCESSORIES
1	ACCU-1	24ABB36A03	F-1	36	32.44	32.44	1	18.1	30	208/230-1	199	A,B,C
NOTES / ACCESSORIES												
A	DISCONNECT SWITCH TO BE PROVIDED BY ELECTRICAL CONTRACTOR.											
B	PROVIDE UNIT PAD.											
C	INSTALLED REFRIGERANT PIPING PER MANUFACTURER RECOMMENDATIONS.											
D	PROVIDE LONG DISTANCE FOR COPPER PIPES LINES ( 150 PLUS FT )											

PACKAGE ROOF TOP UNIT SCHEDULE																	
TAG	MANUFACTURER & MODEL NO.	AREA SERVED	NOMINAL CAPACITY	ELECTRICAL			HEATING DATA		COOLING DATA @ 95 °F OAT			SUPPLY FAN DATA			WEIGHT (LB)	NOTES/ACCESSORIES	
			TONS MIN	V / PH / HZ	MCA (AMPS)	MAX. FUSE SIZE (AMPS)	INPUT MBH	OUTPUT MBH	TOTAL MBH MIN	SENSIBLE MBH	EAT db/wb °F	CFM	ESP "WC	BHP			MIN OA
RTU-1	TRANE / YHC072F3	COMMON AREA	6	208/3/60	32.7	50	150	121.5	72.7	64.5	90/67	2400	1	1.75	500	1200	A,B,C,D,E,F,G,H,I,J,K,L,M
RTU-2	CARRIER/48TCED12A3M5	RESTAURANT	10	208/3/60	53	60	224	184	122.36	94	79.5/66.4	4000	1.91	3.7	1000	1700	A,B,C,D,E,F,G,H,I,J,K,L,M
NOTES AND ACCESSORIES DESIGNATION																	
A	18" HIGH ROOF CURB						I	SMOKE DETECTORS									
B	2" THROWAWAY FILTERS-MERV 8						J	STAINLESS STEEL HEAT EXCHANGER									
C	7-DAY PROGRAMMABLE STAT						K	0-100% ECON, DIFF ENTHALPY CONTROL WTRAQ									
D	FACTORY MOUNTED COMBINATION STARTER / DISCONNECT SWITCH WITH SHUTDOWN CONTACTS						L	BELT DRIVE									
E	SINGLE PORT POWER						M	MEDIUM HEAT									
F	VERTICAL W/ ECONOMIZER & BAROMETRIC RELIEF						N	HORIZONTAL FLOW W/ECONOMIZER & BAROMETRIC RELIEF									
G	STAINLESS STEEL DRIP PAN						O	VARIABLE FREQUENCY DRIVE									
H	CONVENIENCE OUTLET						P	DIRECT DRIVE									

UNITARY HVAC UNIT SCHEDULE													
TAG	MANUFACTURER & MODEL NO.	AREA SERVED	HEATING CAPACITY		COOLING CAP. 80DEG. DB/67DEG. WB TOTAL MBH	SUPPLY FAN ( CFM )	MIN. OA. (CFM)	ELECTRICAL			WEIGHT (LB)	EER	NOTES & ACC.
			INPUT	OUTPUT				VOLTS/PH/HZ	MCA	MOCP			
HVAC-1	MAGIC PAK/36MGE4-12-181NP	UNITS	36	28.8	17.2	600	40	208-1-60	10.7	15	276.0	11.2	A, B, C, D, E, F, G
HVAC-2	MAGIC PAK /48MGE4-12-241NP	UNITS	36	28.8	22.2	800	60	208-1-60	13.5	20	301.0	11.2	A, B, C, D, E, F, G
HVAC-3	MAGIC PAK /48MGE4-12-301NP	UNITS	48	38.4	27.4	1,000	75	208-1-60	21.8	35	319.0	11.2	A, B, C, D, E, F, G
NOTES:													
A	FIRESTAT ON UNITS BELOW 2000 CFM						F	CONDENSATE DRAIN TUBING THRU LOUVER					
B	DIGITAL, PROGRAMMABLE REMOTE THERMOSTAT.						G	DISCONNECT SWITCH					
C	MOUNT ON PLATFORM (PROVIDED BY OTHERS)												
D	THROWAY FILTER												
E	WALL SLEEVE KIT												

WATER HEATER SCHEDULE										
TAG	BASIS OF DESIGN	MODEL	SERVICE	LOCATION	WATER CAPACITY (GAL)	INPUT BTU/HR	GPH @ 90 DEG. F. RISE	GAS CON.	COMBUSTION INLET AND VENT SIZE	NOTES & ACC.
WH-1	LOCHINVAR	LSN041G	SEE DWG	SEE DWG	40	38,000	41	3/4"	3"	A, B, C, D
NOTES:										
A	P & T RELIEF TO FD									
B	FLOOR MOUNTED									
C	CONCENTRIC VENT KIT THRU WALL									
D	NATURAL GAS									
E	120 V DISCONNECT SWITCH									
F	EXPANSION TANK									
G	CIRCULATION PUMP									

ELECTRIC UNIT HEATER SCHEDULE									
TAG	MANUFACTURER & MODEL NO.	LOCATION	MOUNTING	CFM	MBH	ELECTRICAL DATA			NOTES /ACCESSORIES
						AMPS	KW INPUT	VOLT / PH / HZ	
EUH-1	Q-MARK / MUH05-81	MECHANICAL ROOM	SUSPENDED	350	17	24	5	208 / 1 / 60	A, B
NOTES / ACCESSORIES									
A	UNIT INTEGRAL THERMOSTAT								
B	BUILT IN POWER DISCONNECT SWITCH								

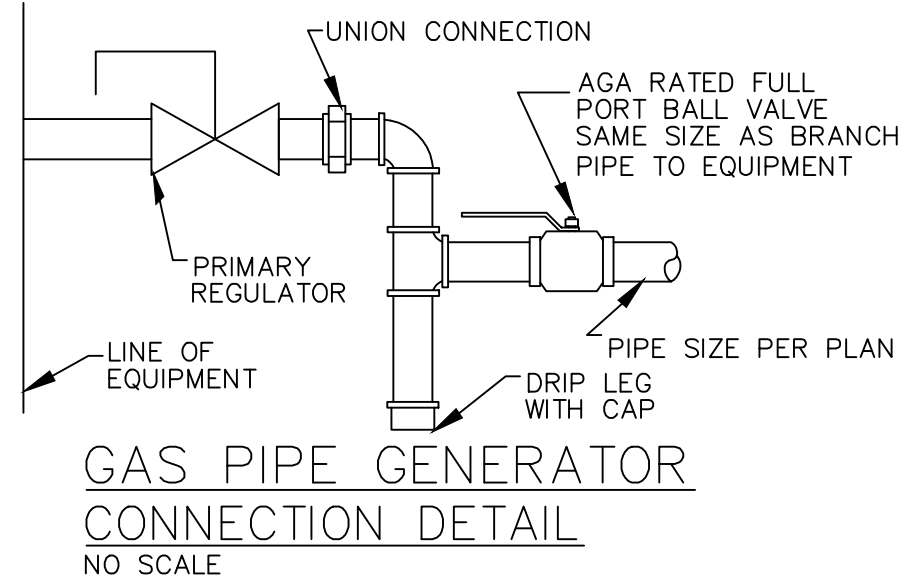
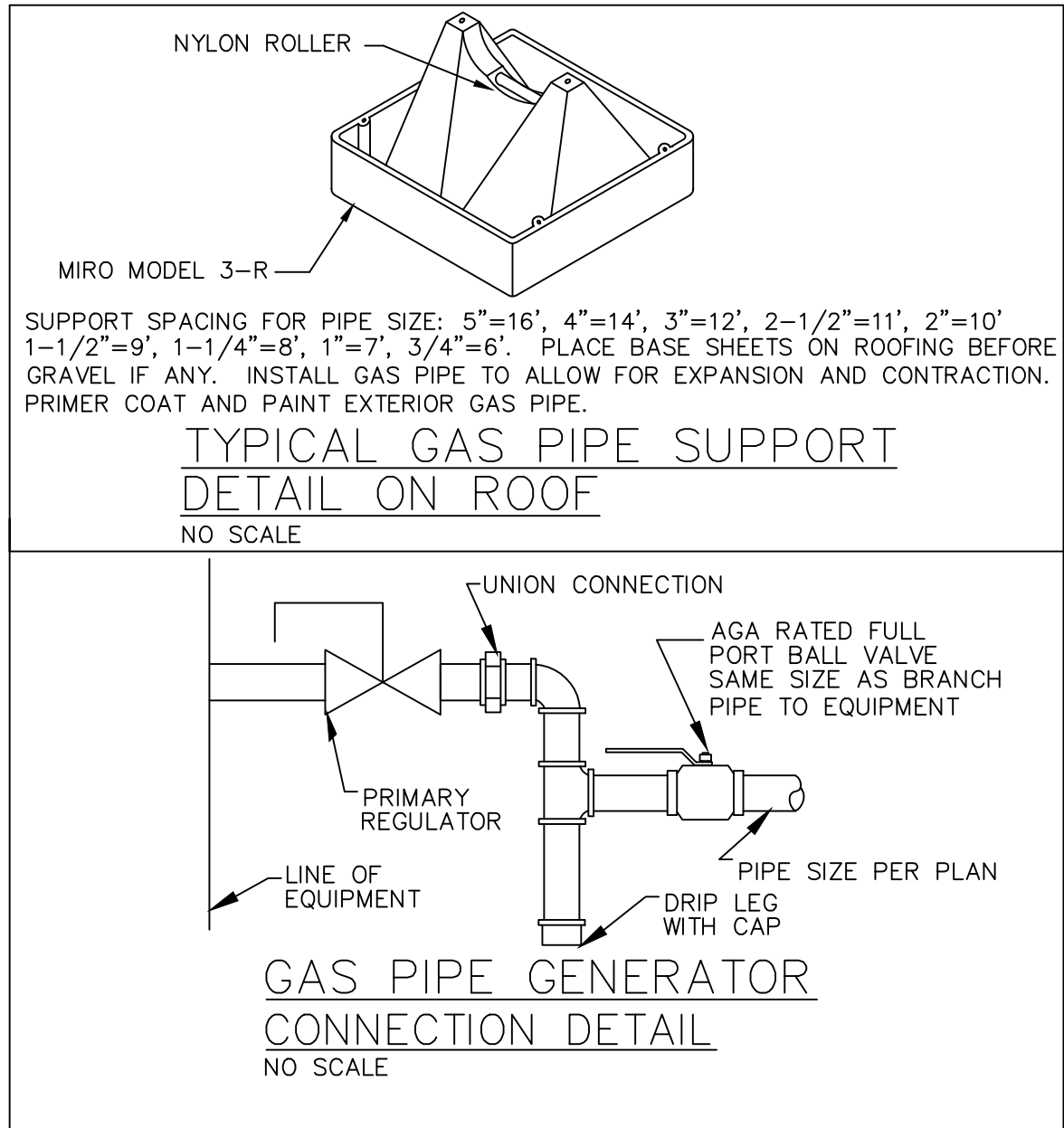
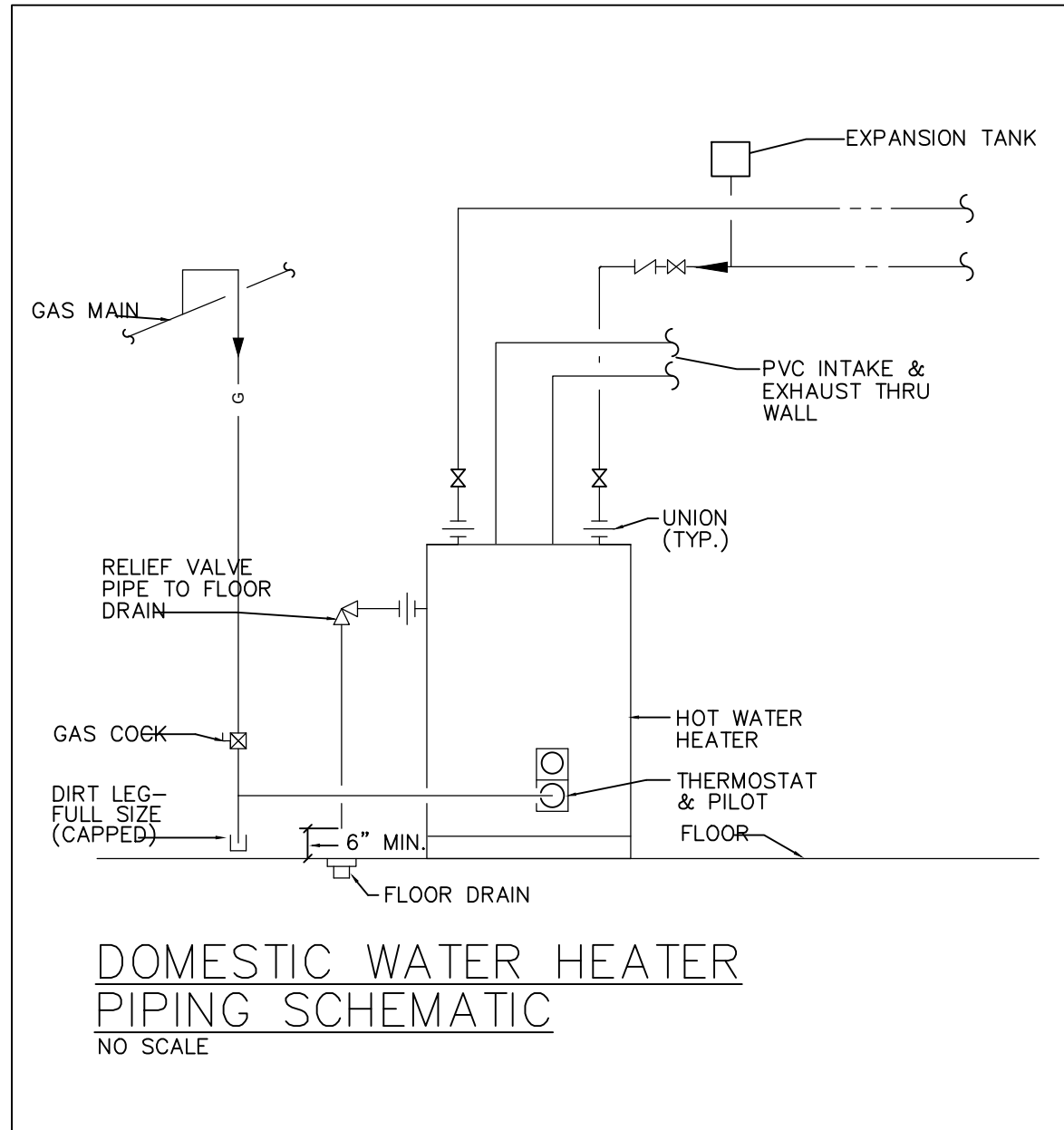
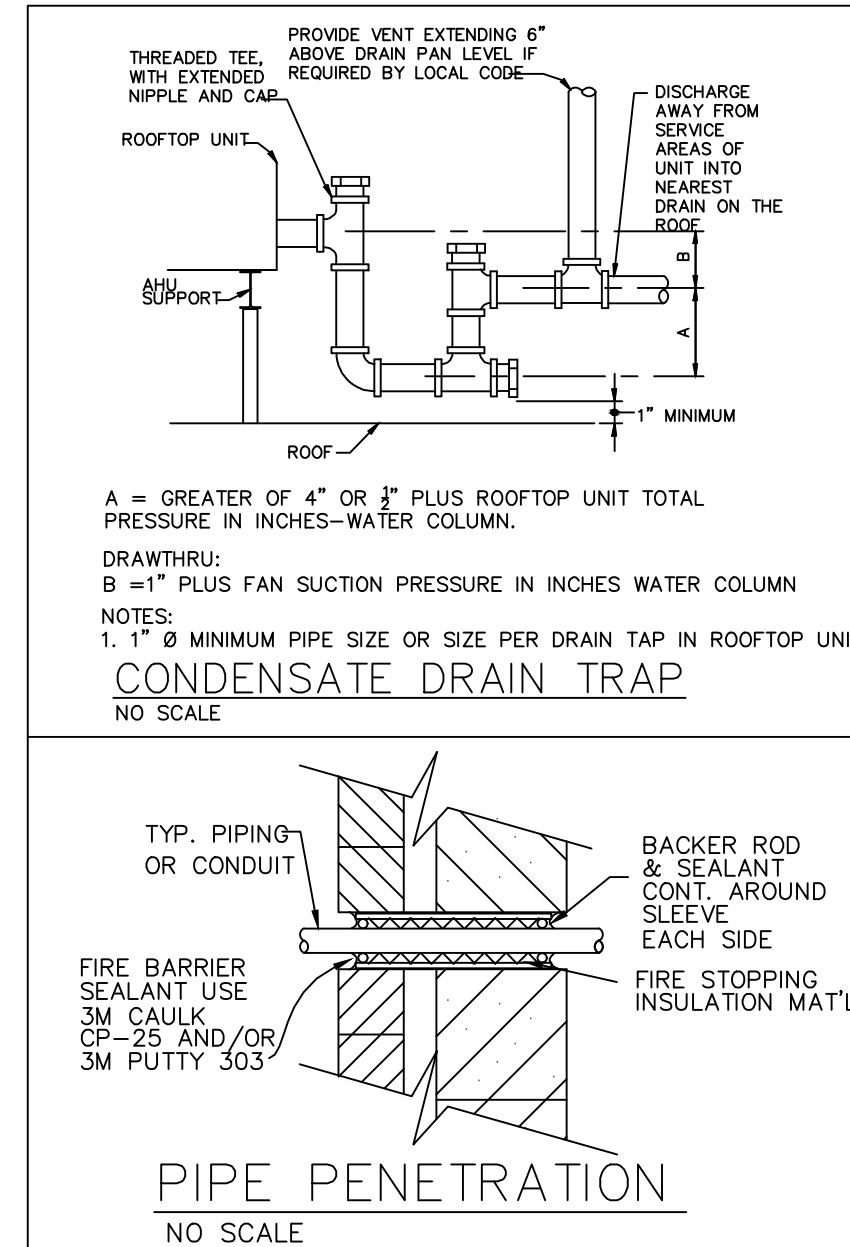
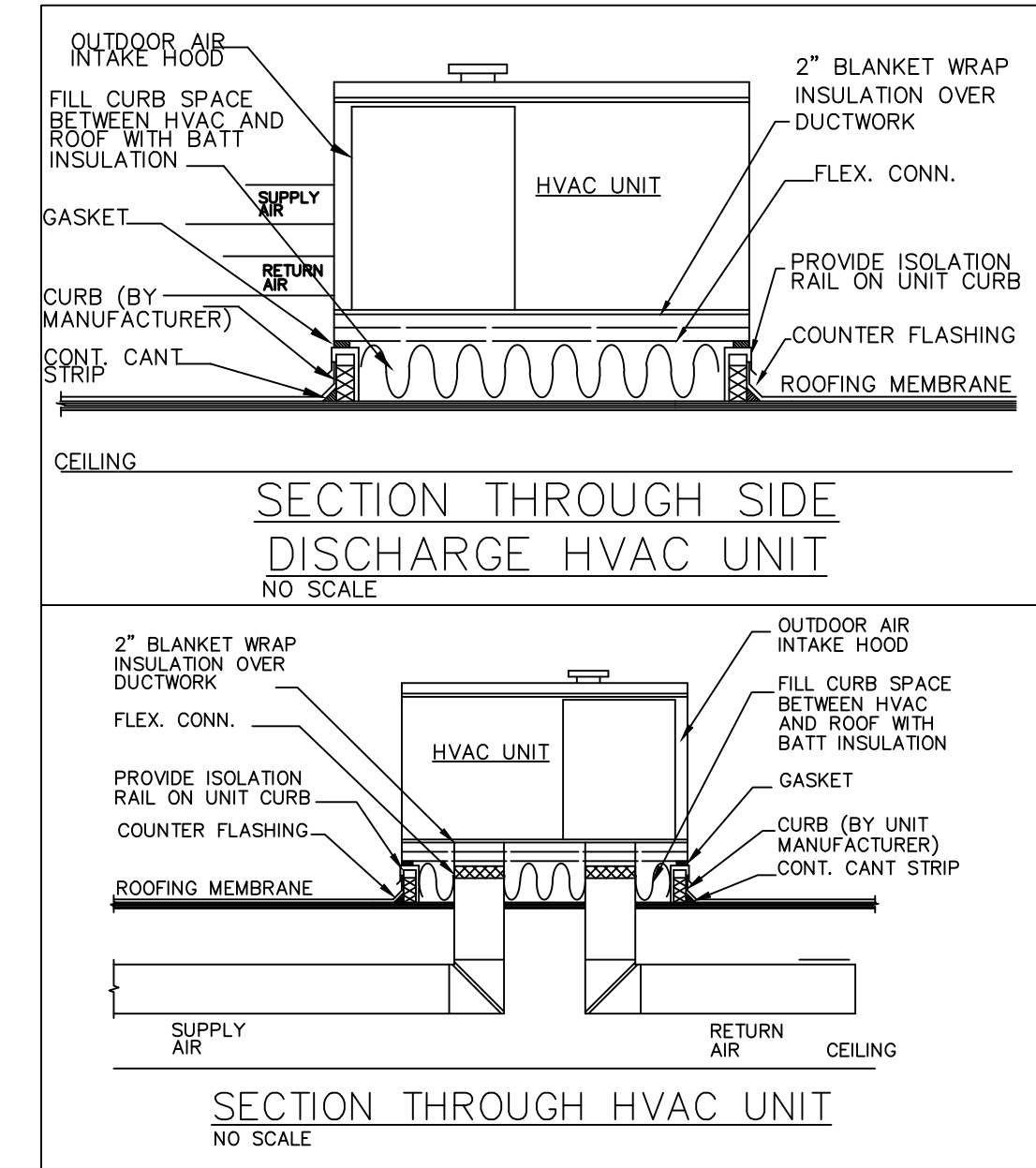
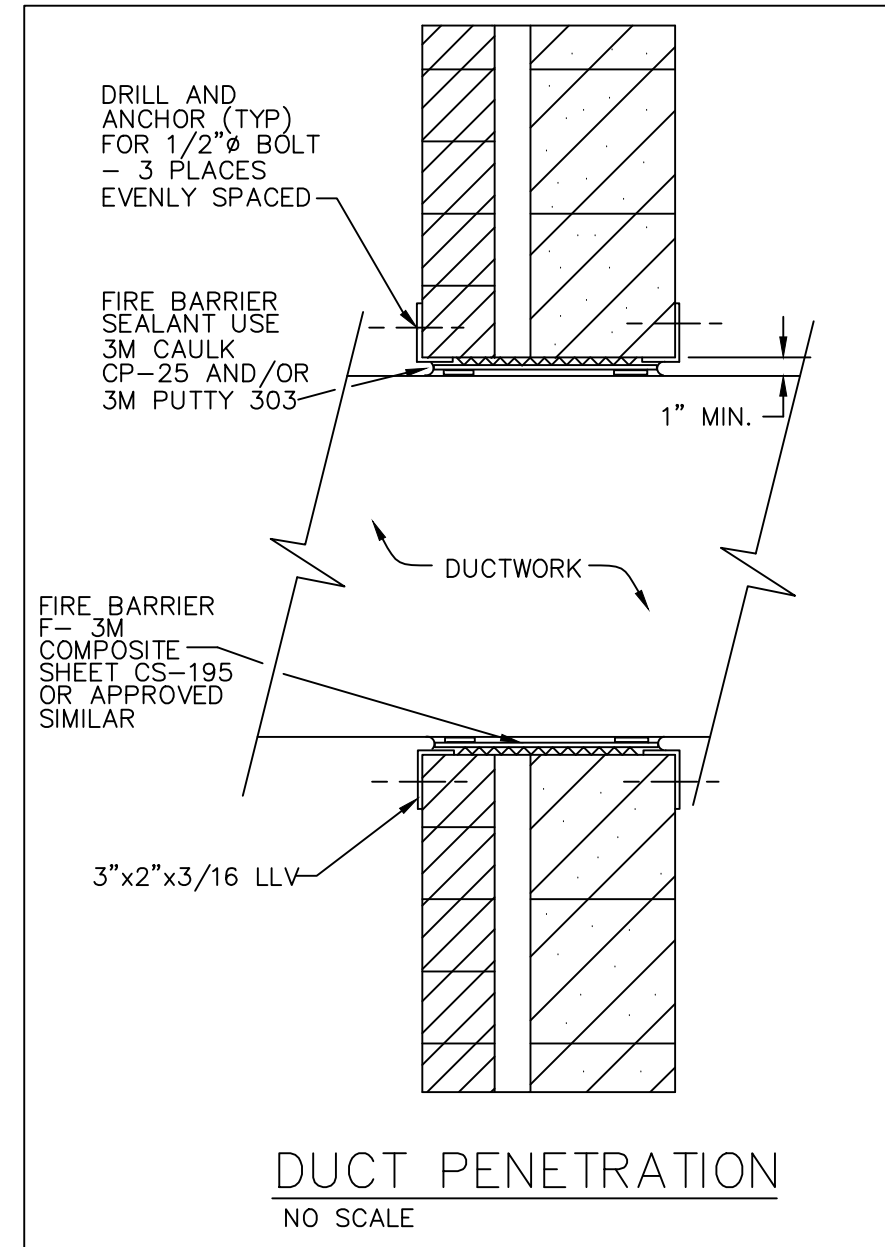
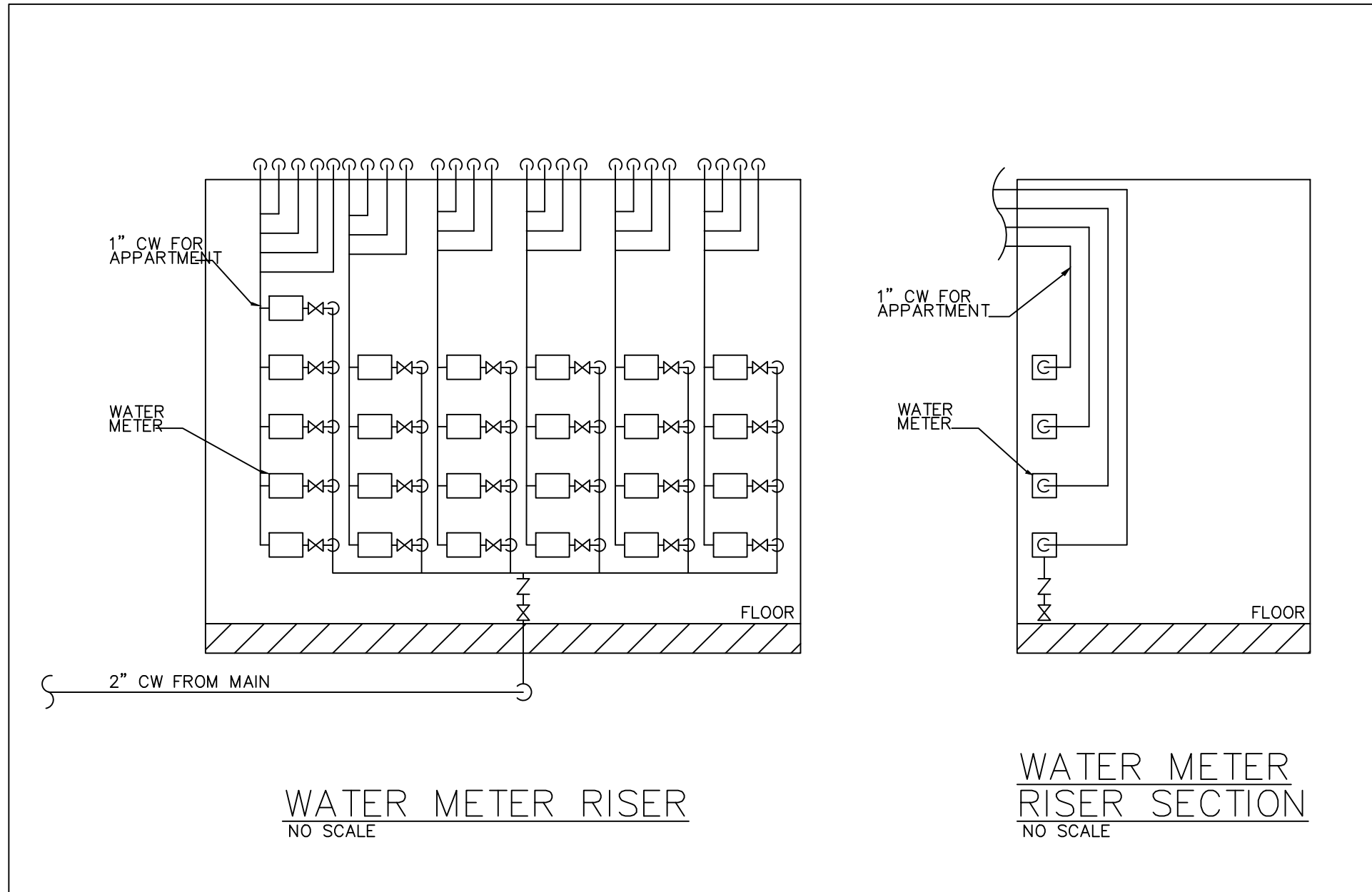
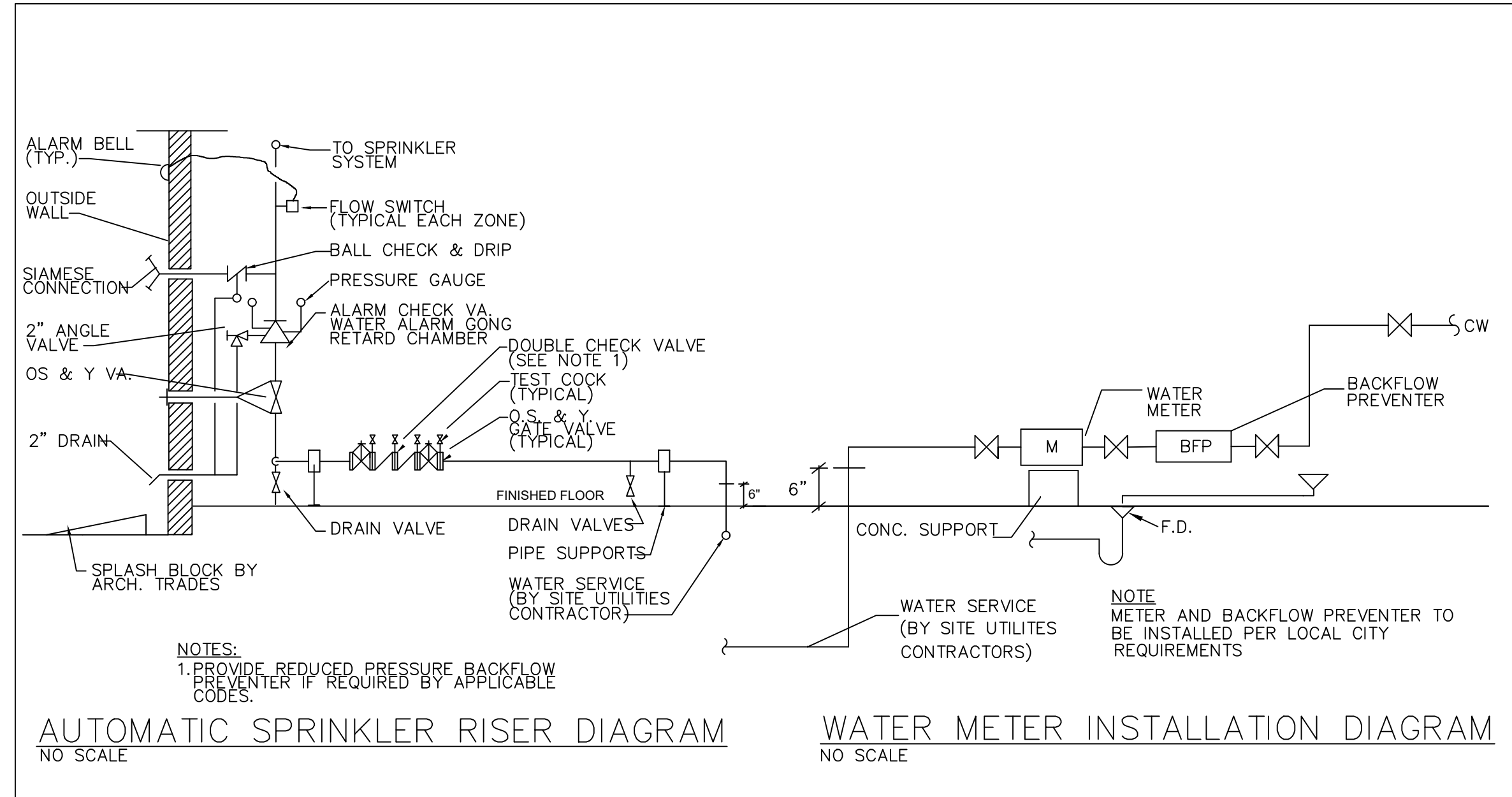
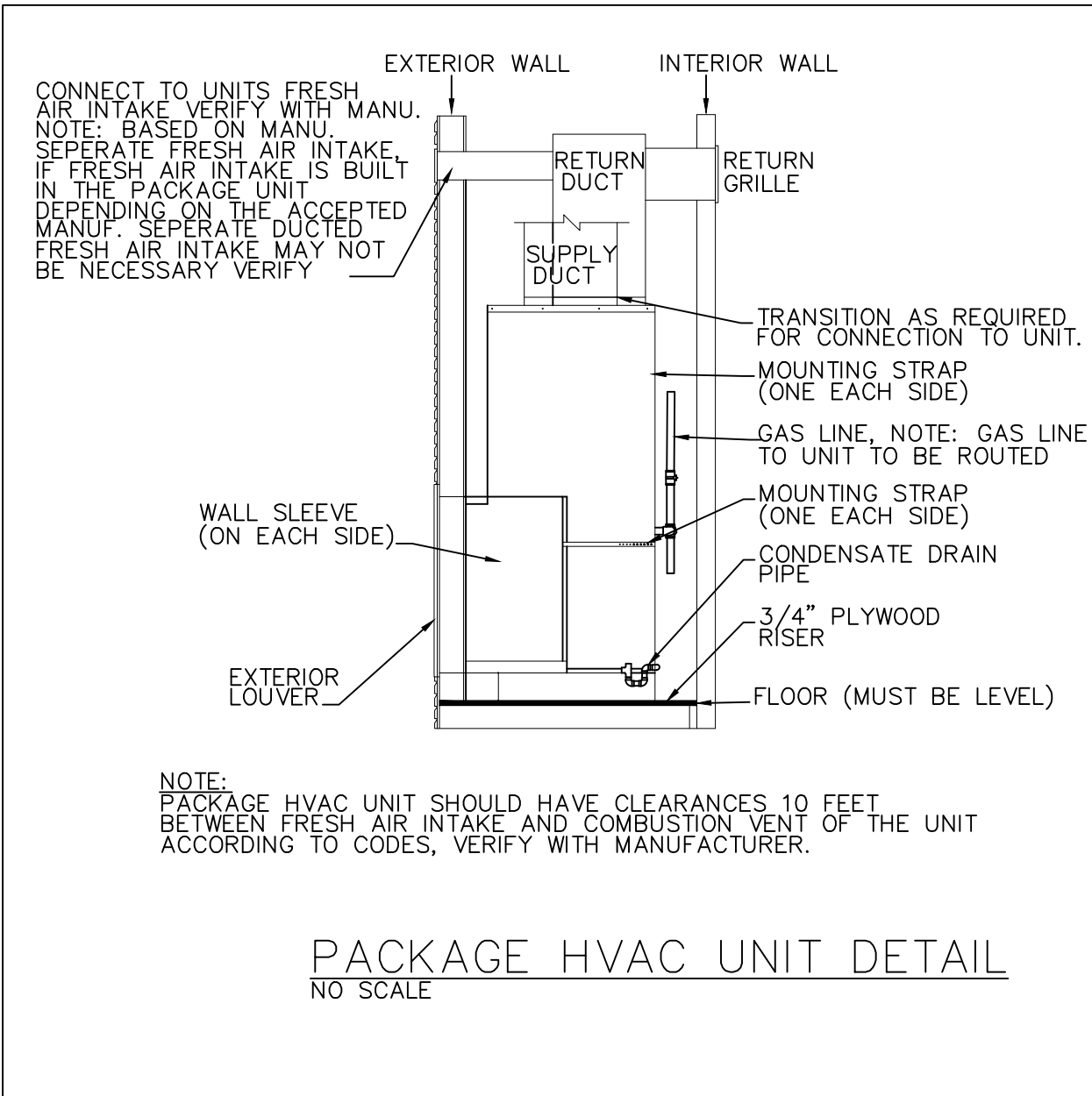
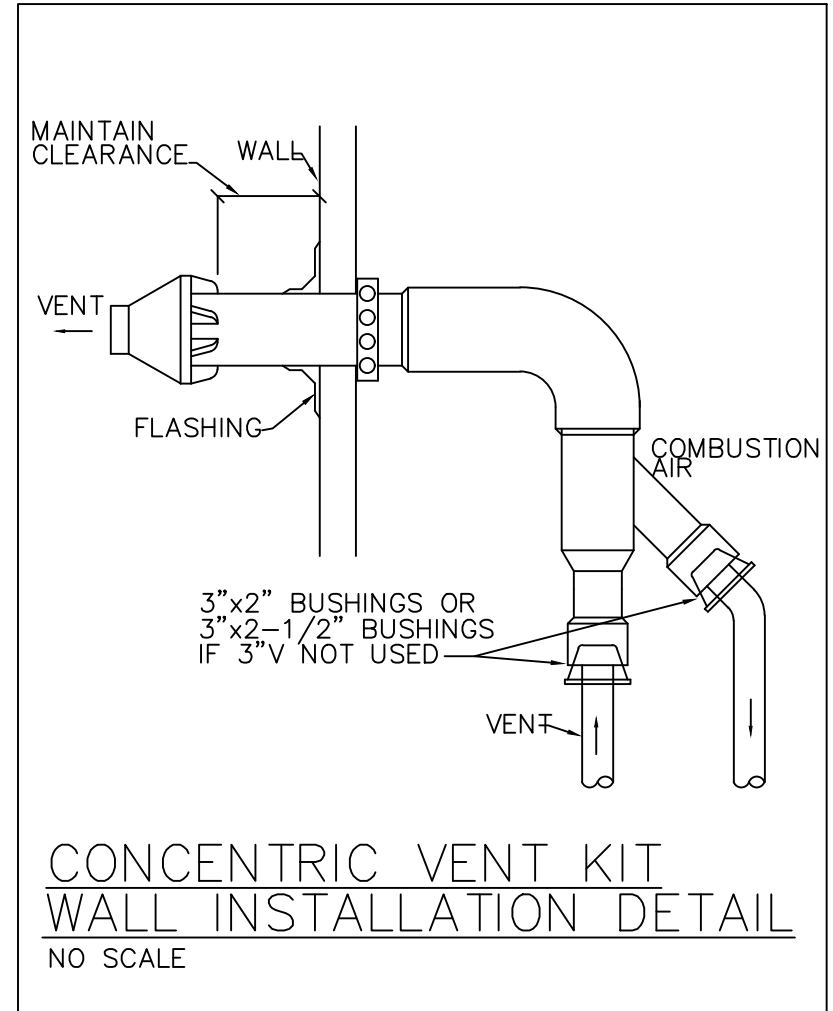
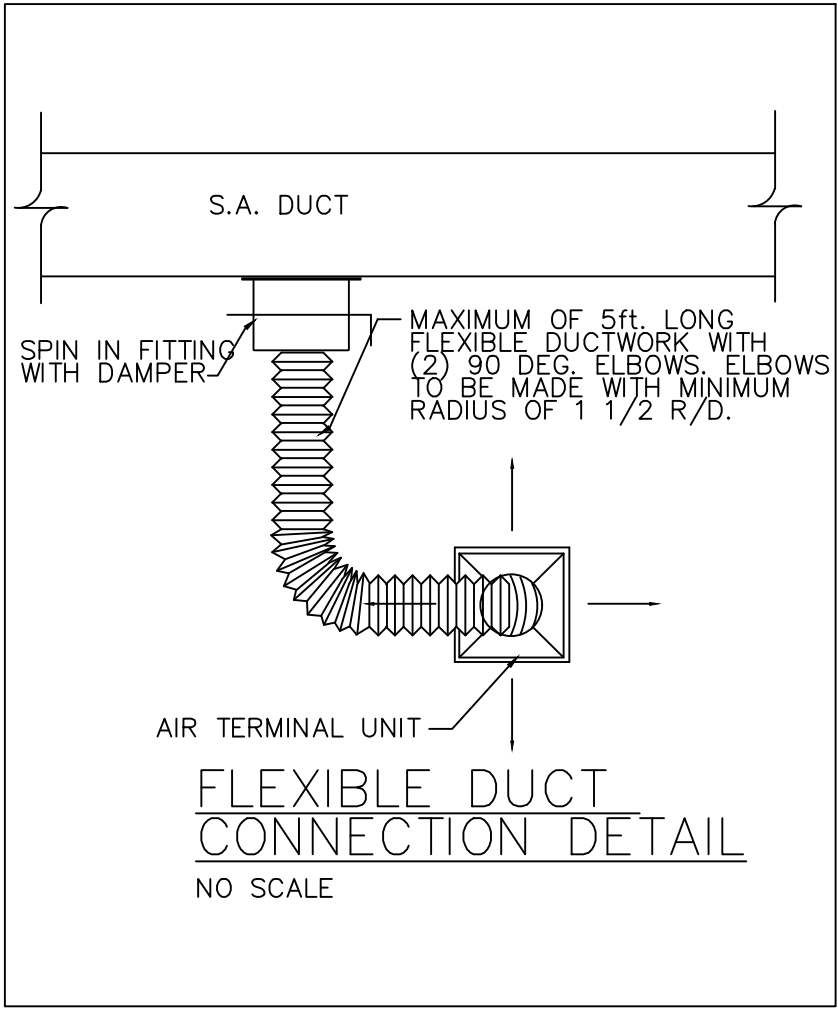
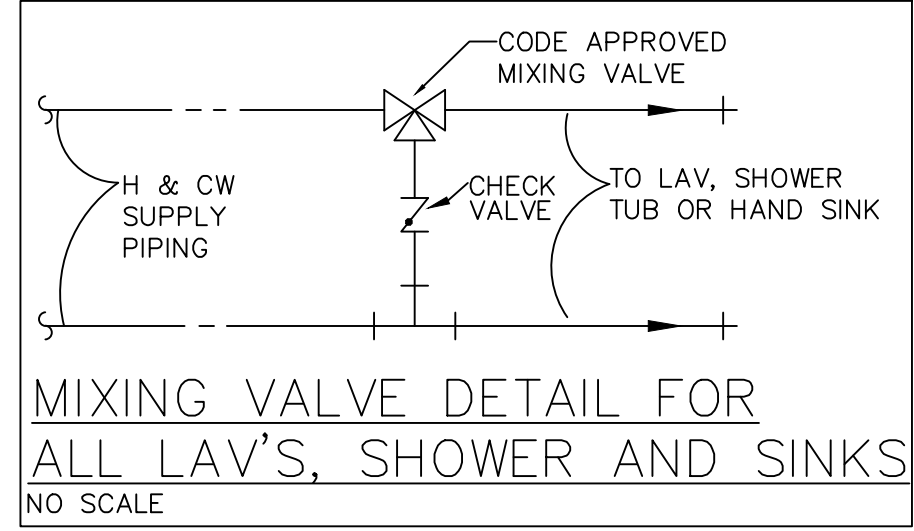
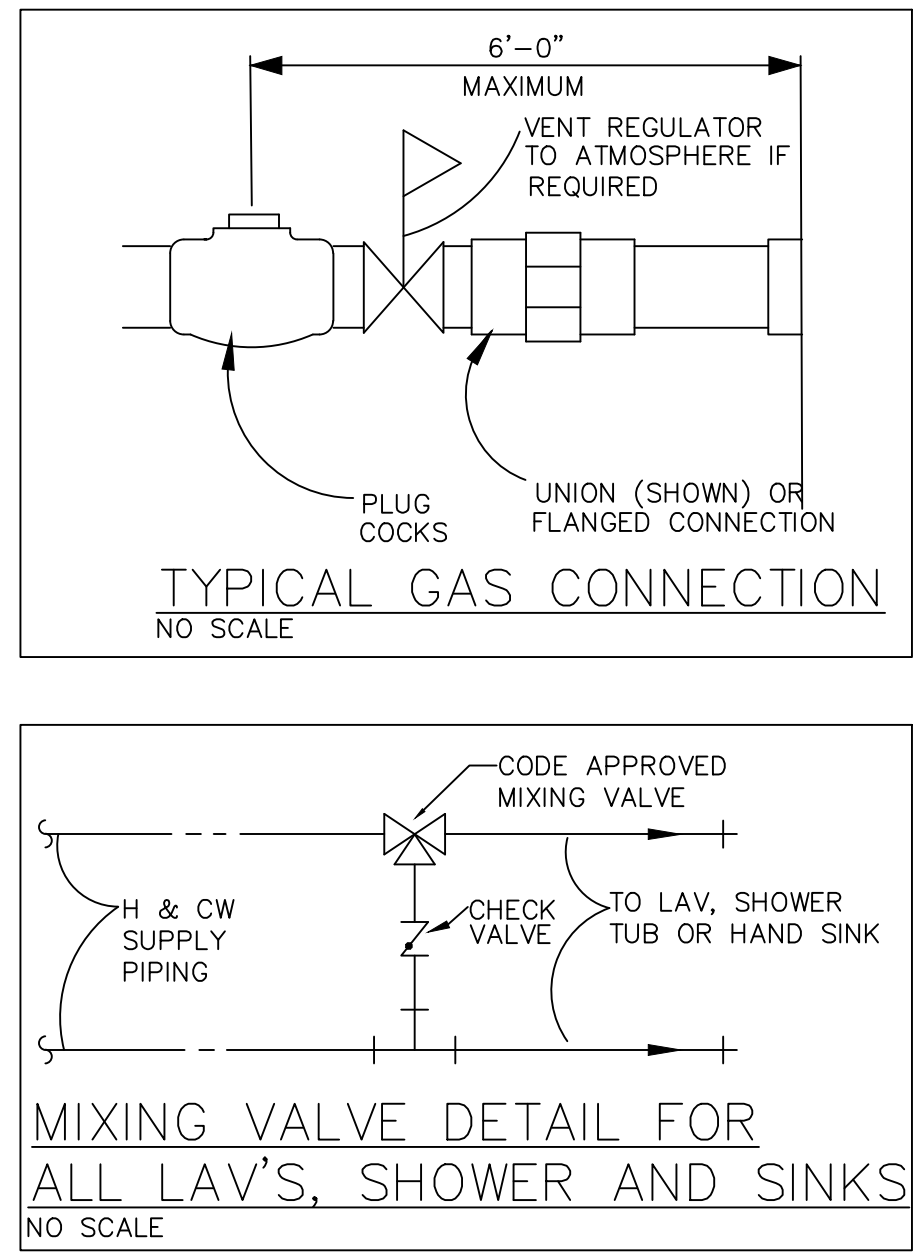
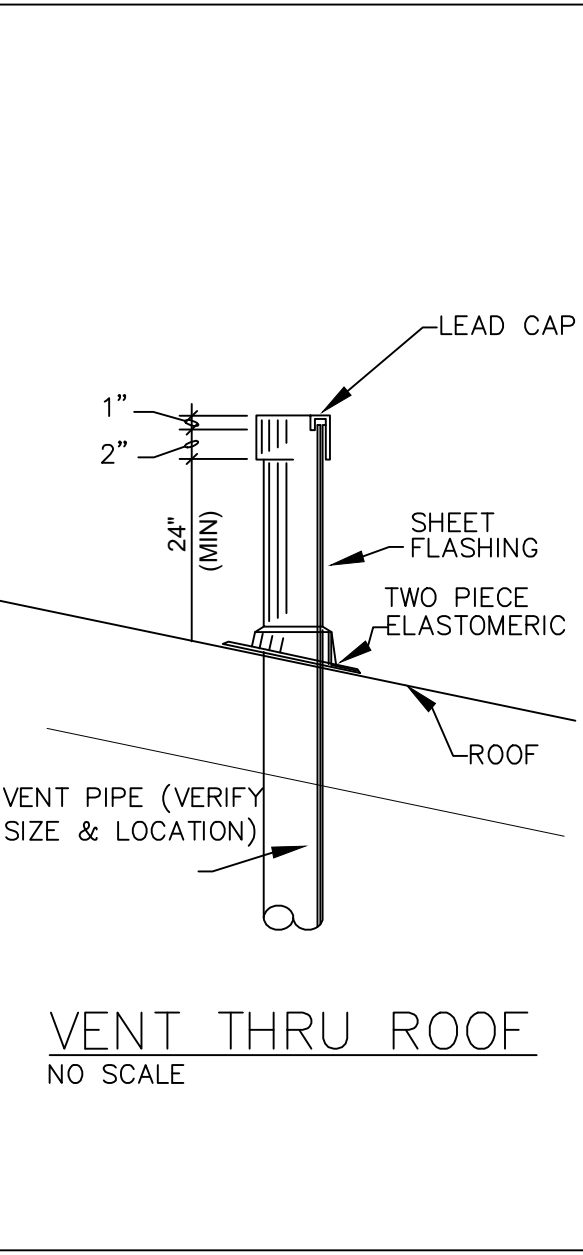
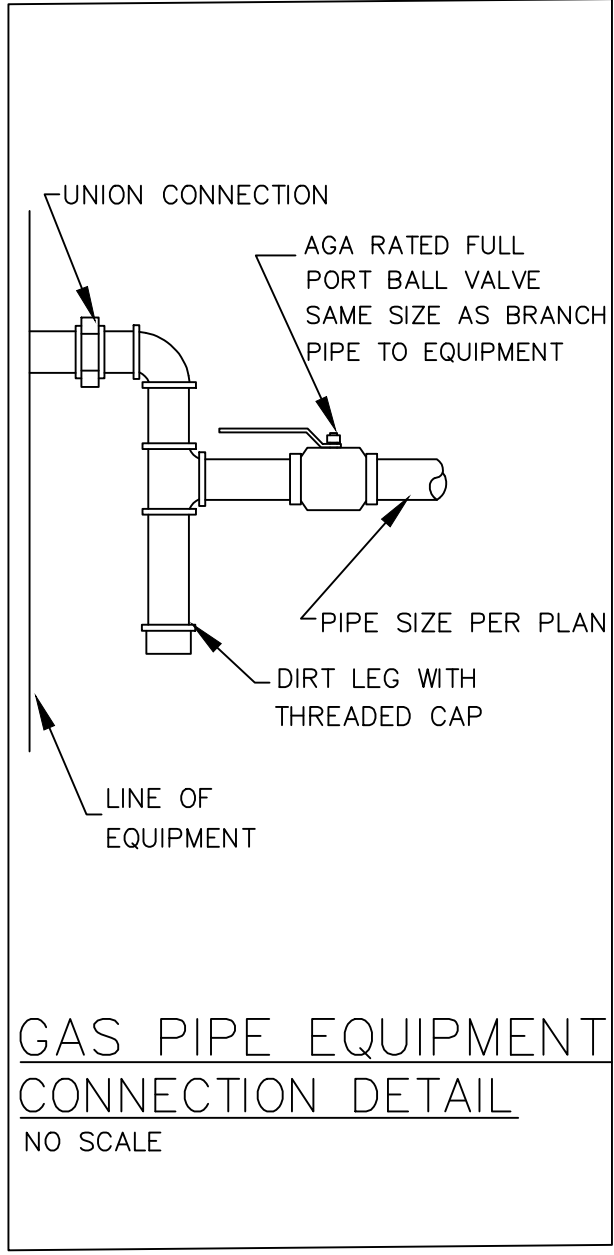
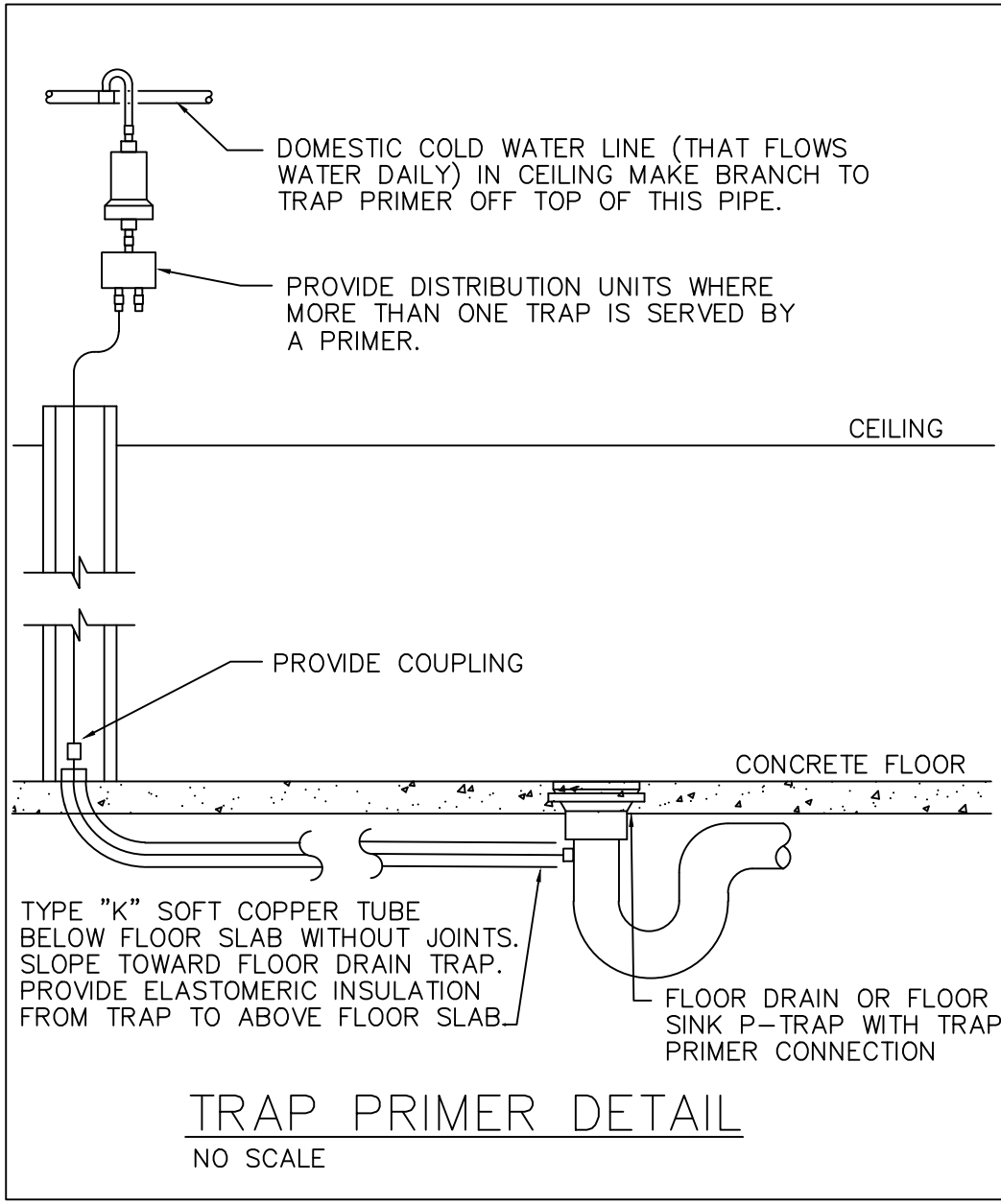
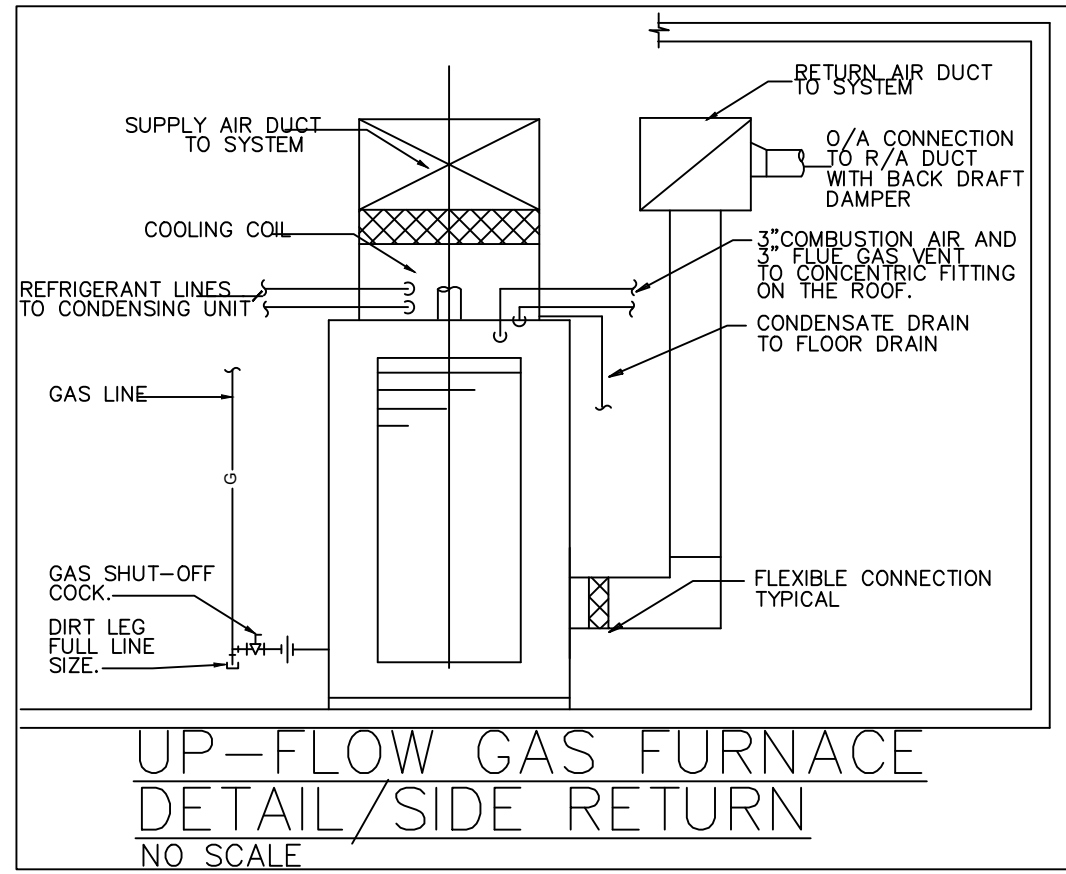
ELECTRIC WALL UNIT HEATER SCHEDULE								
SNO.	TAG	BASIS OF DESIGN	MODEL	LOCATION	TYPE	CAPACIT Y	ELECTRICAL VOLT/PH/HZ	NOTES /ACCESSORIES
1	EWUH-1	Q-MARK	LFK 488F	STAIRS	WALL	4800	208 / 1 / 60	WALL MOUNTED ACCESSORIES, TEHRMAL OVERHEAT PROTECTOR, BUILTIN POWER DISCONNECT SWITCH, UNIT MOUNTED THERMOSTAT.
2	EWUH-2	Q-MARK	LFK 404F	STAIRS	WALL	3000	208 / 1 / 60	
3	EWUH-3	Q-MARK	LFK 404F	STAIRS	WALL	3000	208 / 1 / 60	
4	EWUH-4	Q-MARK	LFK 404F	STAIRS	WALL	3000	208 / 1 / 60	

EXHAUST FAN SCHEDULE											
SNO.	TAG	BASIS OF DESIGN	MODEL	SERVICE	LOCATION	CAPACITY (CFM)	ESP °WC	RPM	ELECTRICAL VOLT/PH/HZ	WATTS / HP	NOTES /ACCESSORIES
1	EF-1	NUTONE W/ LIGHT	ARN80L	RESTROOM	CEILING	75	0.25	950	120 / 1 / 60	42.3 W	A,B,C,D,E
2	EF-2	GREENHECK	GN-164	FURNACE	CEILING	150	0.25	1300	120 / 1 / 60	142 W	A,B,C,E,F
NOTE:											
A PROVIDE FACTORY MOUNTED DISCONNECT SWITCH WITH THERMAL OVERLOAD PROTECTION											
B CONTRACTOR TO FURNISH COMBINATION STARTOR / DISCONNECT SWITCH											
C VERIFY MODEL NUMBER WITH MANUFACTURER EQUIPMENT SUBMITTAL											
D INTERLOCK FAN OPERATION WITH LIGHT SWITCH											
E GRAVITY BACKDRAFT DAMPER											
F INTERLOCK FAN OPERATION WITH FURNACE (F-1)											

GRILLE, REGISTER & DIFFUSER SCHEDULE							
TAG	BASIS OF DESIGN	MODEL	SERVICE	MOUNTING	OVERALL SIZE	NECK SIZE	NOTES /ACCESSORIES
S-1	TITUS	301 RL	SUPPLY	SIDE WALL	SEE PLAN	SEE PLAN	A,B,C
S-2	TITUS	301 RL	SUPPLY	HARD CLG	SEE PLAN	SEE PLAN	A,B,C
TR-1	TITUS	350	RETURN	SIDE WALL	SEE PLAN	SEE PLAN	A,C
R-1	TITUS	350	RETURN	SIDE WALL	SEE PLAN	SEE PLAN	A,C
NOTE:							
A	WHITE FINISH						
B	SQUARE TO ROUND ADAPTOR						
C	OPPOSED BLADE DAMPER						

PLUMBING FIXTURE SCHEDULE									
ITEM	FIXTURE	ITEM	MANUFACTURER & MODEL NUMBER	ACCESSORIES	PIPE CONNECTIONS SIZES (INCH)				
					WASTE	VENT	COLD W.	HOT W.	
FD-1	FLOOR DRAIN		ZURN Z415B-NH		3"	-	-	-	
WC-1	WATER CLOSET	FLOOR MOUNTED TANK TYPE WATER CLOSET	MANSFIELD SUMMIT ELONGATED ADA 1.6 GPF TWO PIECES TANK TYPE TOILET MODEL 384/386 RIGHT HEIGHT 16-1/2" HIGH	SEAT: BEMIS 3155SSCT SUPPLY: MCGUIREE #H172BV FLANGE 1/4 TURN ANGLE VALVE	4"	-	3/4"	-	
LAV-1	LAVATORY	PRIVATE COUNTERTOP LAVATORY	MANSFIELD OVAL LAVATORY COUNTERTOP MODEL #237	FAUCET: DELTA FAUCET CLASSIC SERIES SINGLE HANDLE DECK MOUNTED : 520-DST, 1.2 GPM AERATOR: AMERICAN STANDARD V05. DRAIN: MCGUIRE #155A. SUPPLY: MCGUIRE #H170BV-LR 1/4 TURN. P-TRAP: MCGUIRE #8872C-17T 1-1/2" CHROME PLATED BRASS.	1-1/2"	1-1/2"	1/2"	1/2"	
BT-1	BATHTUB	BATHROOM BATHTUB	STERLING "ENSEMBLE" #71171112(LEFT) IR #711711122(RIGHT)	ROUGH VALVE: GROHE #35065001 TRIM SET: GROHE #19457001 HEAD: GROHE #27591000 ARM: GROHE #27414000 DIVERTER: GROHE #13611000 ALL CHRIME FINISH	1-1/2"	1-1/2"	1/2"	1/2"	




































LIGHTING

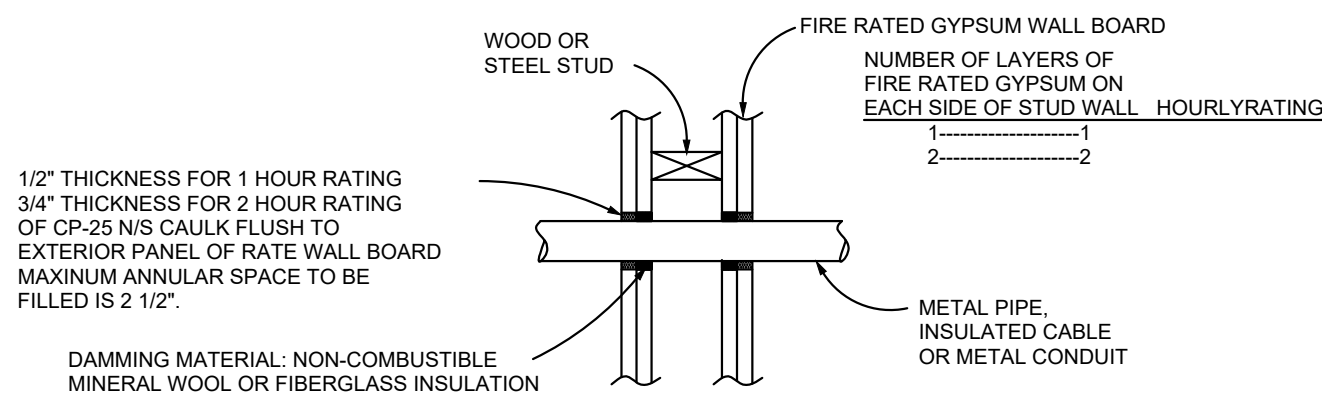
SYM.	DESCRIPTION
S	SWITCH
S3	THREE WAY SWITCH
S4	FOUR WAY SWITCH
	1'x4' FLUORESCENT LIGHT FIXTURE
	CEILING MOUNTED LIGHT FIXTURE
	WALL MOUNTED LIGHT FIXTURE

COMMUNICATION / TV

SYM.	DESCRIPTION
	TV OUTLET
	TELEPHONE/DATA OUTLET
	WALL MOUNTED TELEPHONE OUTLET
	DOOR CHIME
	DOOR CHIME WITH VISUAL (FOR HANDICAP UNITS)

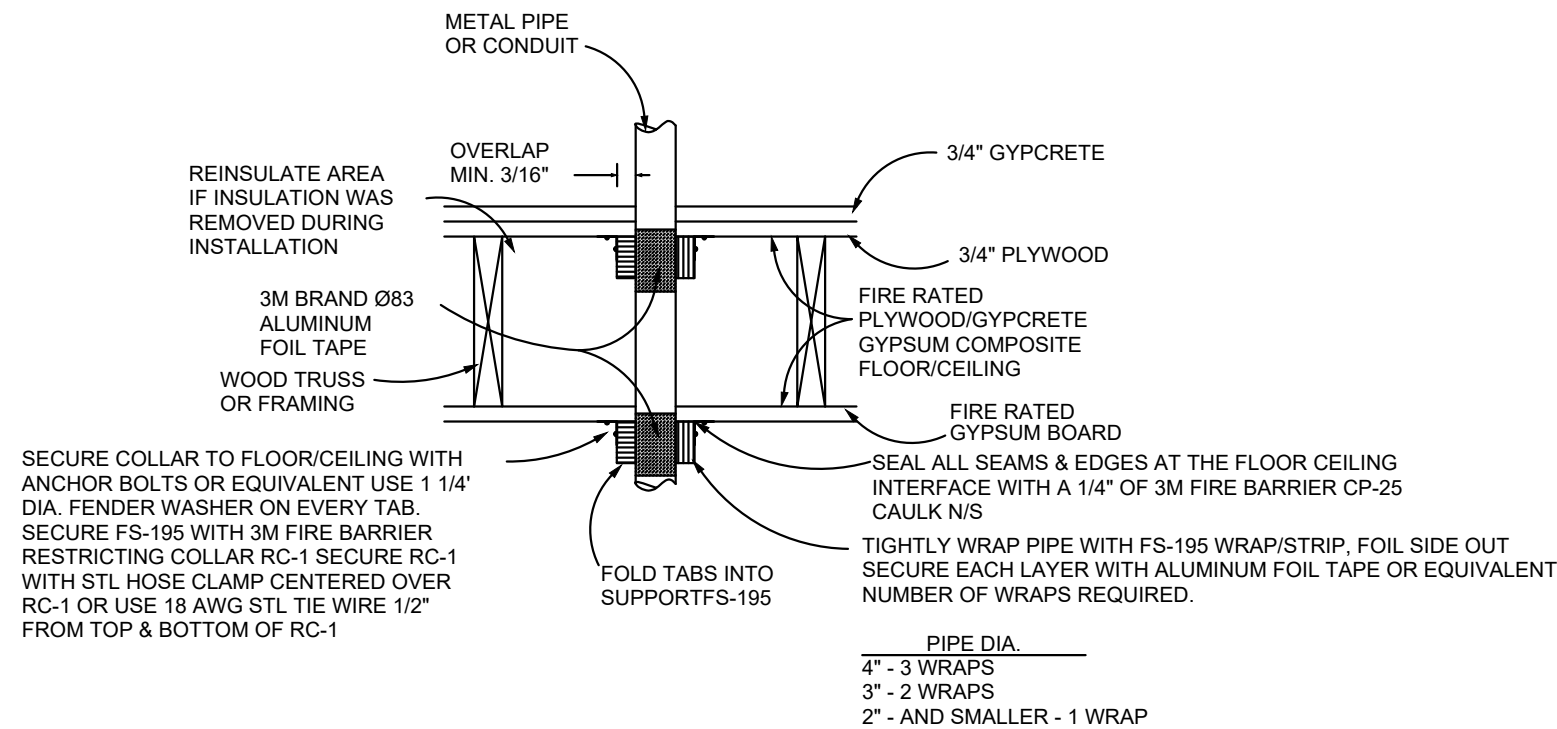
FIRE ALARM

SYM.	DESCRIPTION
	SMOKE DETECTOR 120V
	DUCT SMOKE DETECTOR
	SMOKE DETECTOR 120V WITH VISUAL FLASH LIGHT (FOR HANDICAP UNITS)
	CARBON MONOXIDE DETECTOR
	CARBON MONOXIDE VISUAL DETECTOR
	COMBINATION OF SMOKE DETECTOR 120V & CARBON MONOXIDE DETECTOR
	COMBINATION OF SMOKE DETECTOR 120V WITH VISUAL FLASH LIGHT (FOR HANDICAP UNITS) & CARBON MONOXIDE DETECTOR
	VISUAL ALARM FOR HANDICAP UNITS BATHROOM
	SPRINKLER SYSTEM TAMPER SWITCH
	SPRINKLER SYSTEM FLOW SWITCH
	SPRINKLER SYSTEM WEATHERPROOF HORN/STROBE
	FIRE ALARM PULL STATION
	HORN WITH STROBE LIGHT-WALL MOUNTED
	HORN 520HZ(APARTMENT)
	SINGLE OUTDOOR LIGHT POST
	DOUBLE OUTDOOR LIGHT POST
	FIRE ALARM CONTROL PANEL



METAL PIPE INSULATED CABLE/CONDUIT THROUGH 1-2 HOUR FIRE RATED GYPSUM WALL BOARD











N.T.S.



PLASTIC PIPE/CONDUIT THRU WOOD FRAME FIRE RATED FLOOR/CEILING ASSEMBLY 1-2 HOUR FIRESTOP

N.T.S.

POWER

SYM.	DESCRIPTION
	120V, DUPLEX RECEPTACLE, 18\"/>
	120V, DUPLEX RECEPTACLE, 44\"/>
	240V, 1 PHASE RECEPTACLE
	LIGHTING/RECEPTACLE PANEL
	DISCONNECT SWITCH
	UTILITY METER
	MOTOR
	LIGHTING CONTACTOR
	TIME CLOCK
	PUSH BUTTON
	JUNCTION BOX

ABBREVIATIONS

SYM.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
ACCU	AIR COOLED CONDENSING UNIT
CUH	CABINET UNIT HEATER
D	DRYER
DW	DISHWASHER
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ECUH	ELECTRIC CABINET UNIT HEATER
EUH	ELECTRIC UNIT HEATER
EW	ELECTRIC WATER COOLER
EW	ELECTRIC WATER COOLER
EW	ELECTRIC WATER HEATER
F	FURNACE
GFI	GROUND FAULT INTERUPTER
GD	GARBAGE DISPOSAL
MW/HD	MICROWAVE/RANGE HOOD
MS	METER STACK
NTS	NOT TO SCALE
P.C.	PHOTOCELL
REF	REFRIGERATOR
RN	RANGE
W	WASHER
W/D	WASHER/DRYER
WP	WEATHER PROOF

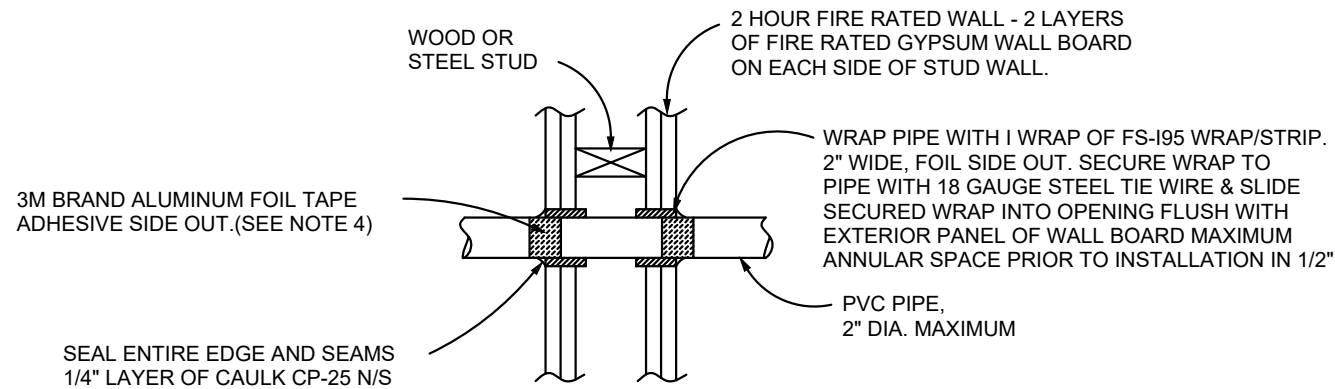
ELECTRICAL DEVICES MOUNTING HEIGHT SCHEDULE (UNITS)	
LIGHTING PANEL (FROM TOP)	72 INCHES (48 INCHES ADA)
APARTMENT LIGHT SWITCH	48 INCHES
APARTMENT RECEPTACLE	18 INCHES
RECEPTACLE ABOVE COUNTER	6 INCHES ACT. (44\"/>
TELEPHONE OUTLET	18 INCHES
TELEPHONE OUTLET (WALL PHONE)	VERIFY
REFRIGERATOR OUTLET	48 INCHES
RANGE HOOD OUTLET	VERIFY WITH SUPPLIER
RANGE OUTLET	VERIFY WITH SUPPLIER
DISPOSER OUTLET	18 INCHES
TELEVISION ANTENNA OUTLET	18 INCHES
WASHER/DRYER OUTLET	VERIFY WITH SUPPLIER
DISHWASHER OUTLET	VERIFY WITH SUPPLIER
INTRUSION ALARM TOUCH KEY PAD (OWNER OPTION)	

ALL MOUNTING HEIGHTS SHALL COMPLY WITH ADA REQUIREMENTS FOR HANDICAP UNITS.

ELECTRICAL SHEET INDEX

SHEET No.	DESCRIPTION
E.000	ELECTRICAL LEGENDS, SYMBOLS, & SHEET INDEX
E.100	ELECTRICAL SITE PLAN
E.100PH	PHOTOMETRIC SITE PLAN-FOR INFORMATION ONLY
E.200	FIRST FLOOR PLAN - POWER, LIGHTING AND SYS.
E.201	SECOND FLOOR PLAN - POWER, LIGHTING AND SYS.
E.202	THIRD FLOOR PLAN - POWER, LIGHTING AND SYS.
E.203	ROOF FLOOR PLAN - ELECTRICAL
E.300	LIGHTING FIXTURE SCHEDULE
E.400	RISER DIAGRAM & PANEL SCHEDULES
E.500	ELECTRICAL SPECIFICATIONS

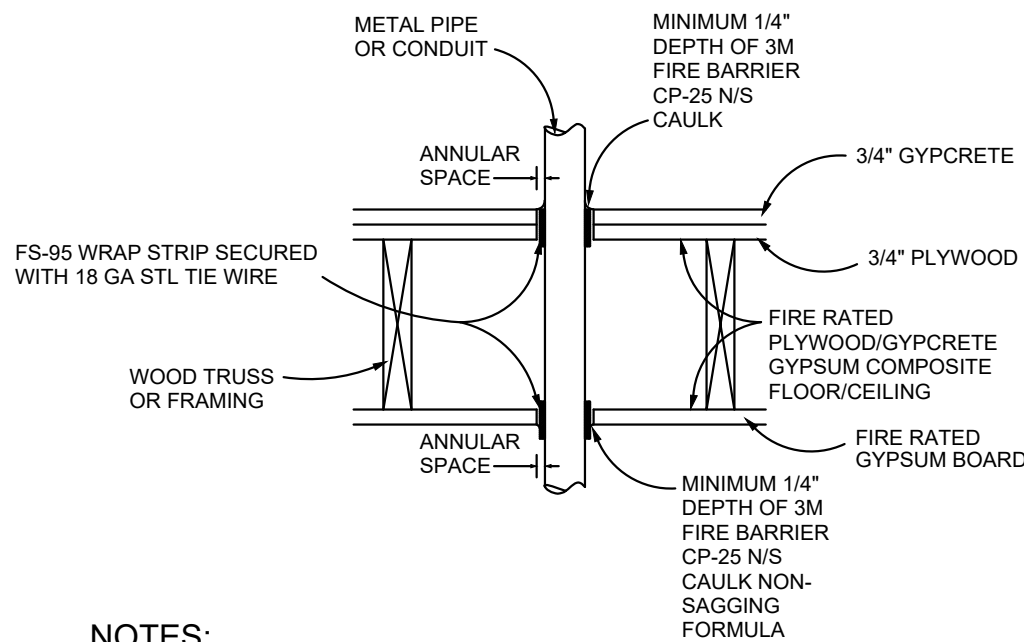
NOT ALL SYMBOLS AND ABBREVIATIONS ARE APPLICABLE TO THIS PROJECT



- NOTES:
- 1- INSTALL 3M FIRESTOP ON BOTH SIDES OF WALL.
  - 2- RECOMMENDATIONS BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) TIME TEMP. FIRE CURVE EXPOSURE.
  - 3- UL CLASSIFICATIONS PER UL SYSTEM 148.
  - 4- DO NOT ALLOW CP-25 CAULK TO COME IN CONTACT WITH PLASTIC PIPE. WRAP PIPE WITH 3M BRAND 083 ALUMINUM FOIL TAPE ADHESIVE SIDE OUT. IN SUSPECT CONTRACT AREAS PRIOR TO CAULKING, OR SEEK ALTERNATIVE CAULKING RECOMMENDED BY MANUFACTURER.

FOR 2\"/>

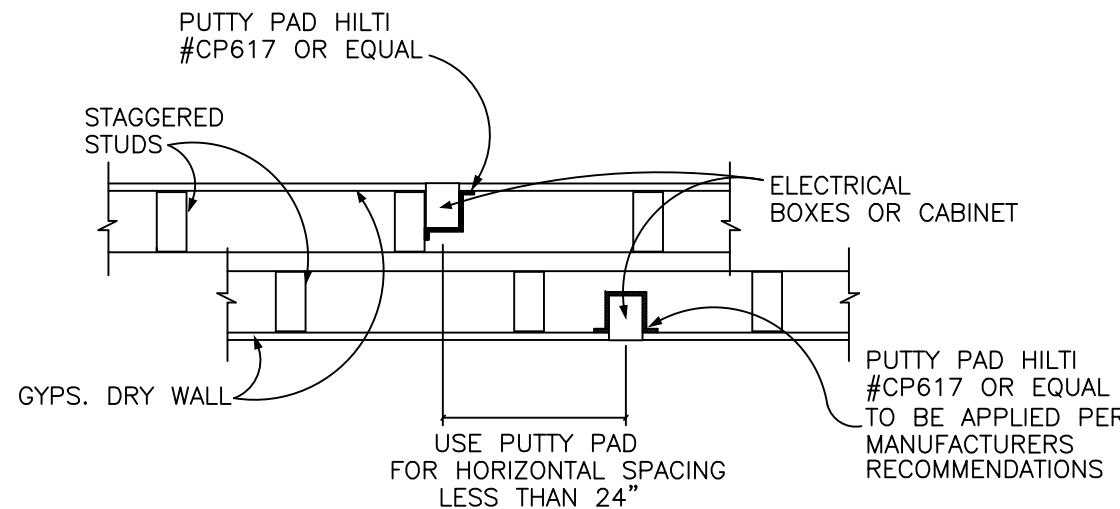
N.T.S.



- NOTES:
- 1- IF ANNULAR SPACE IS LESS THAN 1/2\"/>
  - 2- APPLY LAYER(S) OF FS-95 WRAP/STRIP AROUND PIPE OR CONDUIT ABOVE FLOOR. SECURE WITH 18 GA. STL. TIE WIRE. SLIDE SECURED WRAP(S) INTO OPENING FLUSH WITH FINISHED FLOOR. APPLY A 1/4\"/>
  - 3- APPLY LAYER(S) OF FS-195 WRAP/STRIP AROUND PIPE OR CONDUIT BELOW CEILING. SECURE WITH 18 GA. STL. TIE WIRE. SLIDE SECURED WRAP(S) INTO OPENING CENTERED ON GYPSUM BOARD. APPLY A 1/4\"/>
  - 4- THIS DESIGN RECOMMENDATIONS IS BASED ON 3M APPLICATIONS ENGINEERING JUDGEMENT AND PAST PRODUCT PERFORMANCE.

METAL PIPE/CONDUIT THRU WOOD FRAME FIRE RATED FLOOR/CEILING ASSEMBLY 1-2 HOUR FIRESTOP

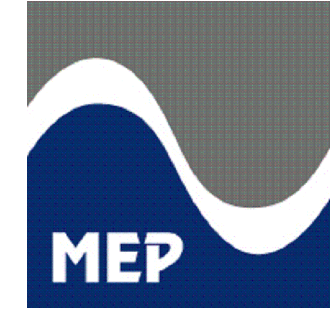
N.T.S.



DETAIL OF BOXES ON OPPOSITE SIDES OF A FIRE RATED WALL ASSEMBLY

N.T.S.

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TROY CROSSING  
APARTMENTS  
TROY, MICHIGAN

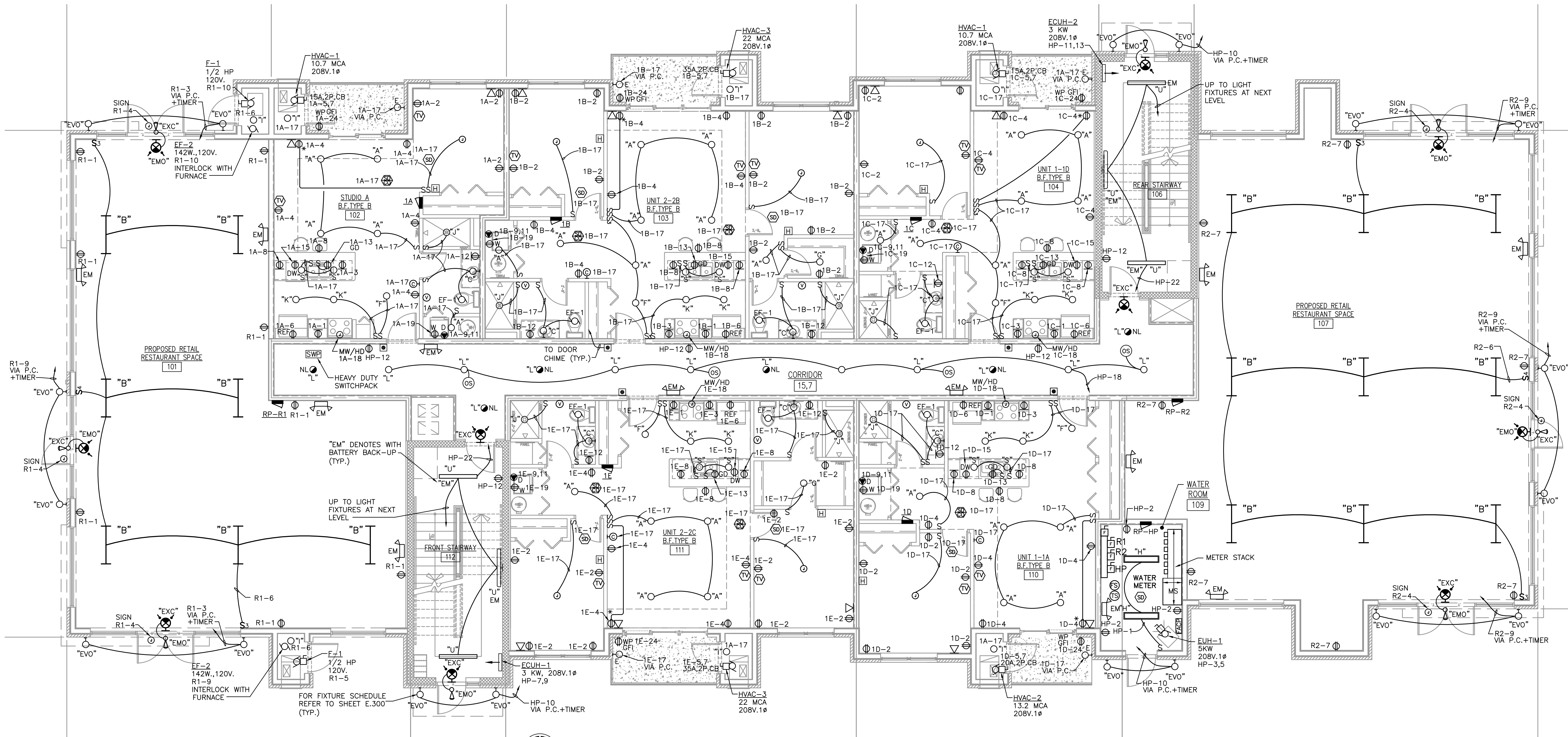
ELECTRICAL LEGENDS, SYMBOLS AND SHEET INDEX

PROJECT NUMBER	ISSUE	DATE	DESCRIPTION
MEP # 207-18	11-29-2021	100% OWNER REVIEW	
	12-2-21	COORDINATION	
	12-23-21	PERMIT	
DESIGN: J.C.			
DRAWN: J.C.			

SHEET

E.000





NOTES:

1. ALL ABOVE COUNTER RECEPTACLES IN THE KITCHEN & BATHROOMS ARE TO BE GFI. ALL RECEPTACLES IN GARAGES & OUTDOOR SHALL BE GFI. RECEPTACLES WITH 6' OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER AND IN LAUNDRY AREA SHALL BE GFI.
  2. OUTLET BOXES ON OPPOSITE SIDES OF A FIRE RATED WALL ASSEMBLY SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24" OR ELSE USE FIRE STOP PUTTY PADS BEHIND OUTLETS TO MAINTAIN THE FIRE RATING.
  3. UNLESS OTHERWISE NOTED, ALL SMOKE DETECTORS IN THE UNITS TO BE SERVED FROM CIRC. #17
  4. ALL OUTLET BOXES MOUNTED IN FIRE RATED WALLS OR CEILINGS, TO HAVE A FIRE RATING EQUAL TO OR GREATER THAN WALL OR CEILING RATING IN WHICH IT IS MOUNTED. MAINTAIN MANUFACTURERS SPACING REQUIREMENTS.
  5. ALL RECEPTACLES IN DWELLING TO BE TAMPER RESISTANT PER MEC 406.12
  6. FOR FIRE RATED FLOOR/CEILING OR WALL PENETRATION REFER TO DETAILS ON SHEET E-000.
  7. FIRE ALARM DEVICES FINAL LOCATIONS SHALL BE COORDINATED IN FIELD TO BE COMPLIANCE WITH FIRE MARSHALL REQUIREMENTS.
- \* SWITCH TO CONTROL HALF OF DUPLEX RECEPTACLE.

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TROY CROSSING  
APARTMENTS  
TROY, MICHIGAN

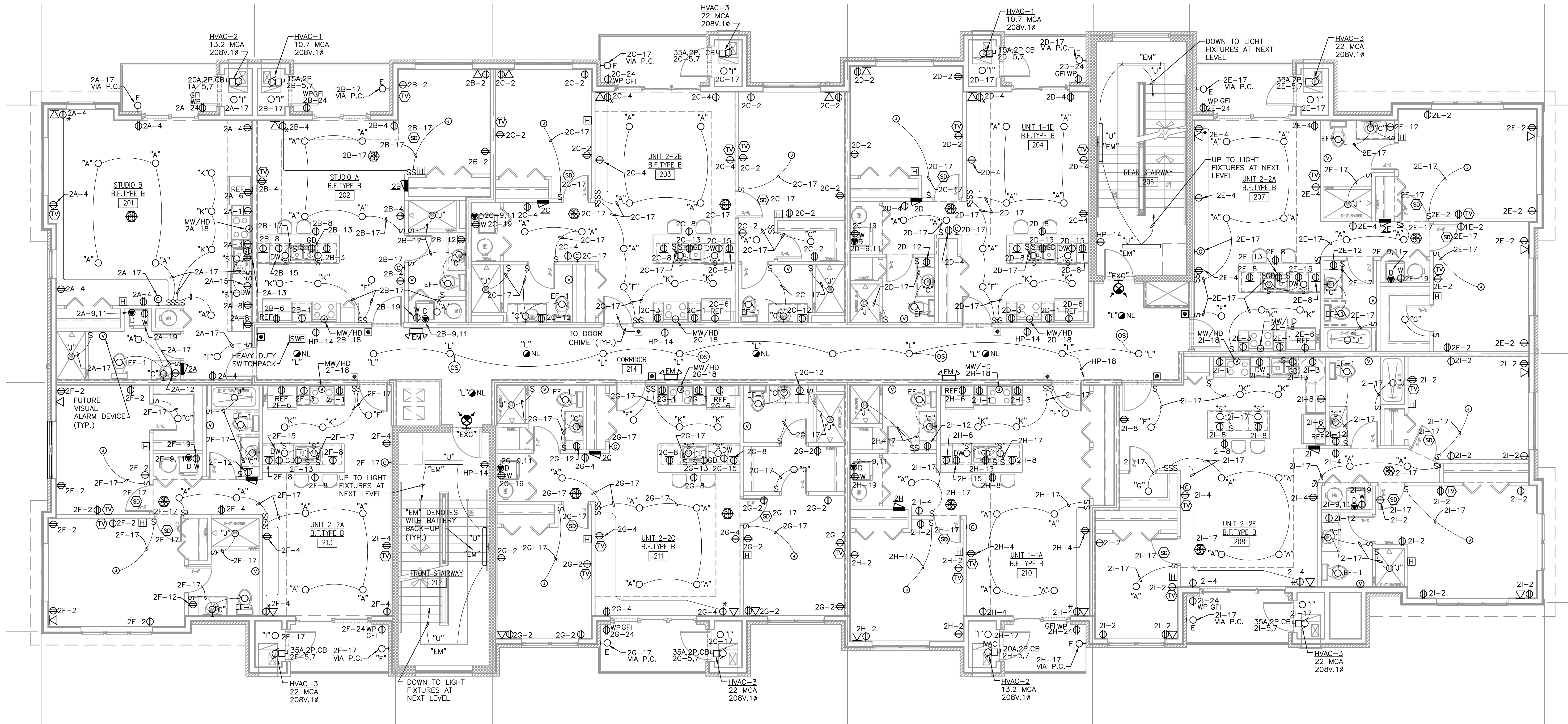
FIRST FLR PLAN - PWR, LTG. AND SYS. - BLDG. #5

PROJECT NUMBER	ISSUE	DATE	DESCRIPTION
MEP # 207-18	DATE	11-29-2021	100% OWNER REVIEW
	COORDINATION	12-2-21	
	PERMIT	12-23-21	

DESIGN: J.M.	DRAWN: J.K.
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SHEET  
**E.200**





- NOTES:**
1. ALL ABOVE COUNTER RECEPTACLES IN THE KITCHEN & BATHROOMS ARE TO BE GFI. ALL RECEPTACLES IN GARAGES & OUTDOOR SHALL BE GFI. RECEPTACLES WITH 6" OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER AND IN LAUNDRY AREA SHALL BE GFI.
  2. OUTLET BOXES ON OPPOSITE SIDES OF A FIRE RATED WALL ASSEMBLY SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24" OR ELSE USE FIRE STOP PUTTY PADS BEHIND OUTLETS TO MAINTAIN THE FIRE RATING.
  3. UNLESS OTHERWISE NOTED, ALL SMOKE DETECTORS IN THE UNITS TO BE SERVED FROM CIRC. #17
  4. ALL OUTLET BOXES MOUNTED IN FIRE RATED WALLS OR CEILINGS, TO HAVE A FIRE RATING EQUAL TO OR GREATER THAN WALL OR CEILING RATING IN WHICH IT IS MOUNTED. MAINTAIN MANUFACTURERS SPACING REQUIREMENTS.
  5. ALL RECEPTACLES IN DWELLING TO BE TAMPER RESISTANT PER MEC 406.12
  6. FOR FIRE RATED FLOOR/CEILING OR WALL PENETRATION REF-1ER TO DETAILS ON SHEET E-000.
  7. FIRE ALARM DEVICES FINAL LOCATIONS SHALL BE COORDINATED IN FIELD TO BE COMPLIANCE WITH FIRE MARSHALL REQUIREMENTS.
- \* SWITCH TO CONTROL HALF OF DUPLEX RECEPTACLE.

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**MEP**



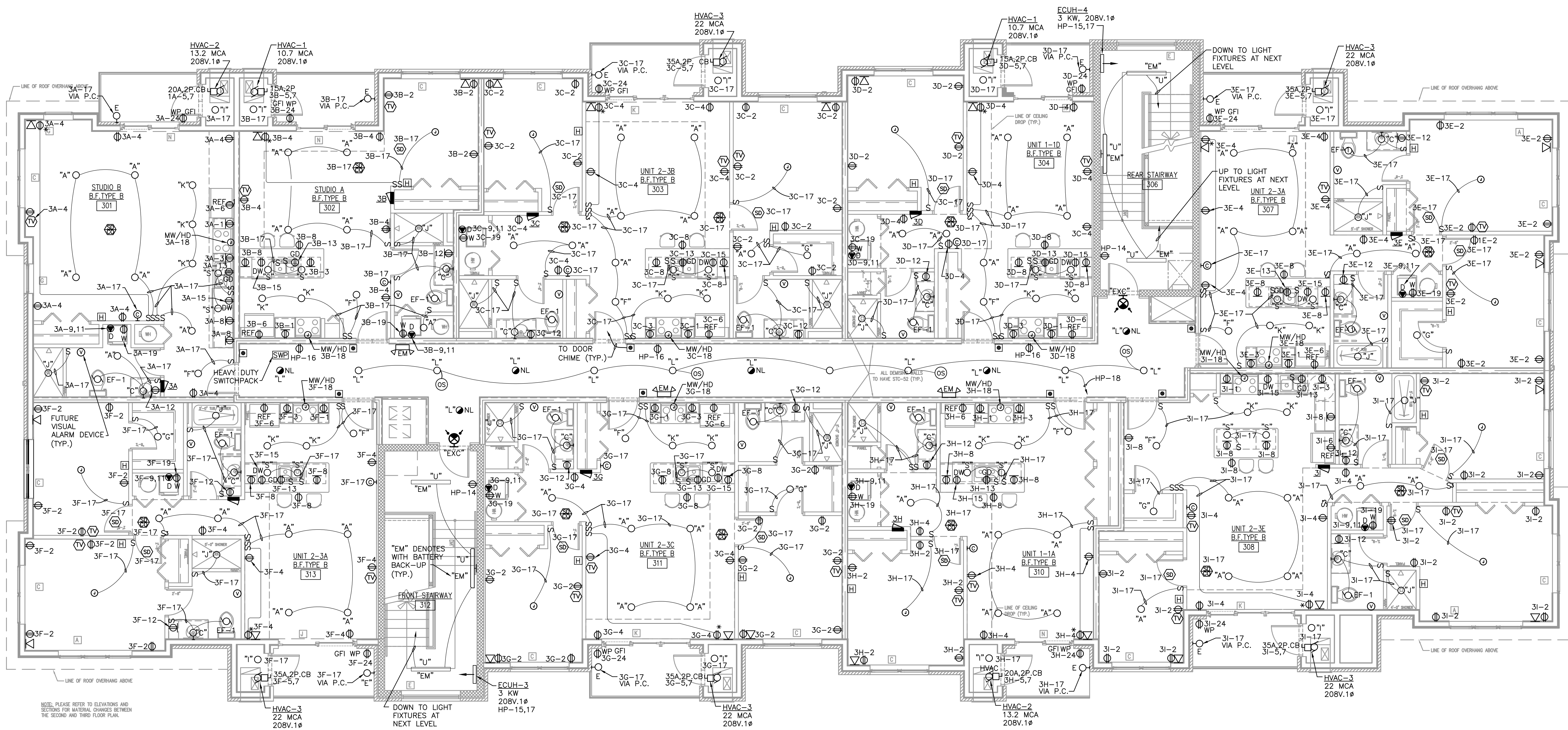
**TROY CROSSING APARTMENTS**  
TROY, MICHIGAN

**SECOND FLR. PLAN - PWR, LTG. AND SYS. - BLDG. #5**

PROJECT NUMBER	ISSUE	DATE	DESCRIPTION
MEP # 207-18	11-29-2021	100% OWNER REVIEW	
	12-2-21	COORDINATION	
	12-23-21	PERMIT	
DESIGN: J.C.			
DRAWN: J.C.			

SHEET  
**E.201**





NOTE: PLEASE REFER TO ELEVATIONS AND SECTIONS FOR MATERIAL CHANGES BETWEEN THE SECOND AND THIRD FLOOR PLAN.

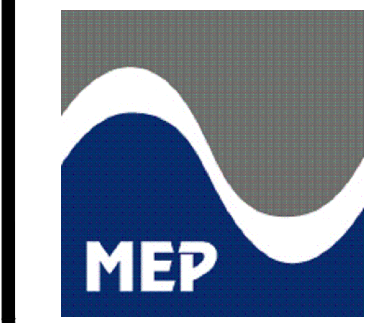


THIRD FLOOR PLAN - POWER, LIGHTING AND SYSTEMS-BLDG #5  
SCALE: 3/16" = 1'-0"

NOTES:

1. ALL ABOVE COUNTER RECEPTACLES IN THE KITCHEN & BATHROOMS ARE TO BE GFI. ALL RECEPTACLES IN GARAGES & OUTDOOR SHALL BE GFI. RECEPTACLES WITH 6' OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER AND IN LAUNDRY AREA SHALL BE GFI.
  2. OUTLET BOXES ON OPPOSITE SIDES OF A FIRE RATED WALL ASSEMBLY SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24" OR ELSE USE FIRE STOP PUTTY PADS BEHIND OUTLETS TO MAINTAIN THE FIRE RATING.
  3. UNLESS OTHERWISE NOTED, ALL SMOKE DETECTORS IN THE UNITS TO BE SERVED FROM CIRC. #17
  4. ALL OUTLET BOXES MOUNTED IN FIRE RATED WALLS OR CEILINGS, TO HAVE A FIRE RATING EQUAL TO OR GREATER THAN WALL OR CEILING RATING IN WHICH IT IS MOUNTED. MAINTAIN MANUFACTURERS SPACING REQUIREMENTS.
  5. ALL RECEPTACLES IN DWELLING TO BE TAMPER RESISTANT PER MEC 406.12
  6. FOR FIRE RATED FLOOR/CEILING OR WALL PENETRATION REFER TO DETAILS ON SHEET E-000.
  7. FIRE ALARM DEVICES FINAL LOCATIONS SHALL BE COORDINATED IN FIELD TO BE COMPLIANCE WITH FIRE MARSHALL REQUIREMENTS.
- \* SWITCH TO CONTROL HALF OF DUPLEX RECEPTACLE.

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TROY CROSSING  
APARTMENTS  
TROY, MICHIGAN

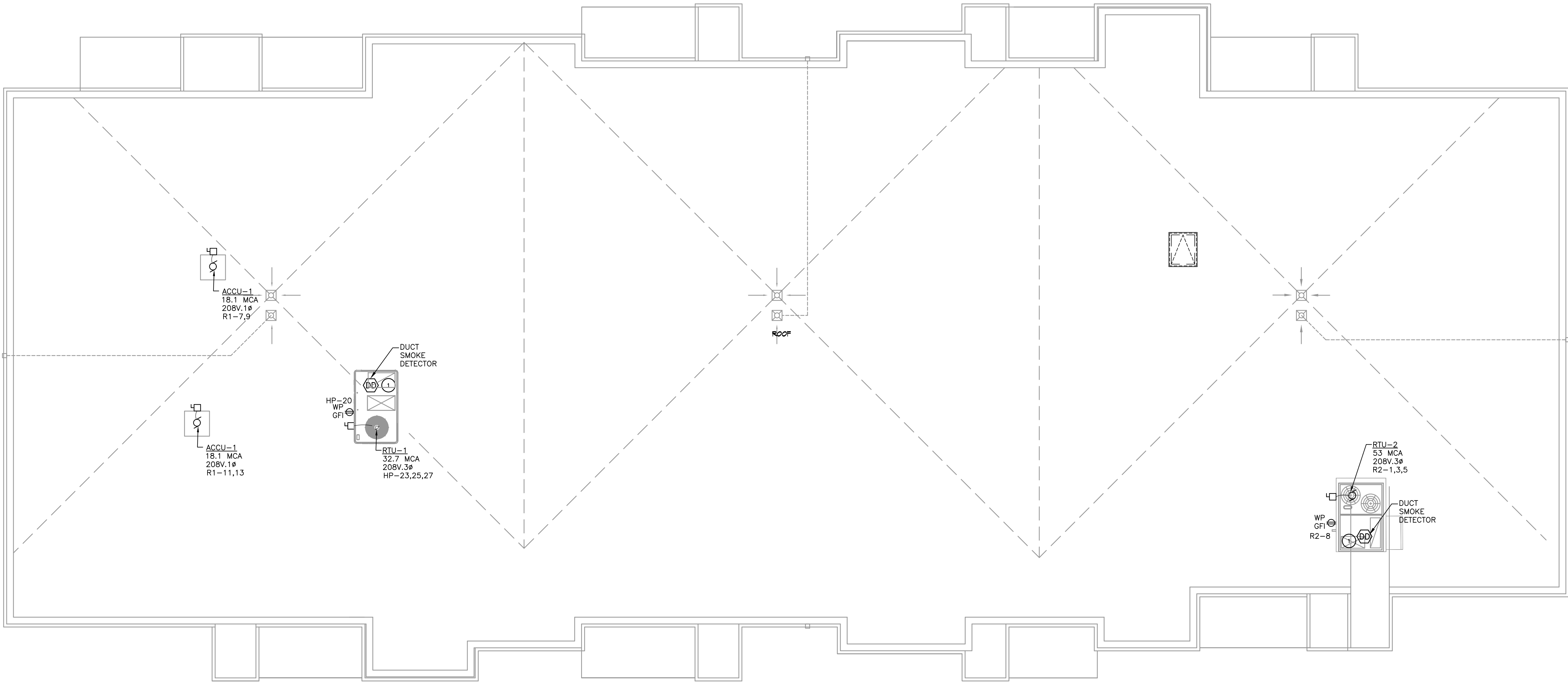
THIRD FLR. PLAN - PWR, LTG. AND SYS. - BLDG. #5

PROJECT NUMBER	ISSUE	DATE	DESCRIPTION
MEP # 207-18		11-29-2021	100% OWNER REVIEW
		12-2-21	COORDINATION
		12-23-21	PERMIT

DESIGN: J.C.  
DRAWN: J.C.

SHEET  
**E.202**





ROOF PLAN - ELECTRICAL - BLDG #5

SCALE: 3/16" = 1'-0"

### KEY NOTES:

- ① DUCT SMOKE DETECTOR ARE PROVIDED BY MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR.

### NOTES:

1. COORDINATE THIS SHEET WITH MECHANICAL DRAWINGS, AND ARCHITECTURAL DRAWINGS.  
2. FOR CIRCUITING, REFER TO PANEL SCHEDULE AND RISER DIAGRAM ON E.400.



TROY CROSSING  
APARTMENTS  
TROY, MICHIGAN

ROOF PLAN -ELECTRICAL - BLDG. #5

PROJECT NUMBER	ISSUE		
	DATE	DESCRIPTION	
	11-29-2021	100% OWNER REVIEW	
	12-2-21	COORDINATION	
DESIGN: J.C.	12-23-21	PERMIT	
DRAWN: J.C.			

SHEET

E.203

MEP Engineers LLC

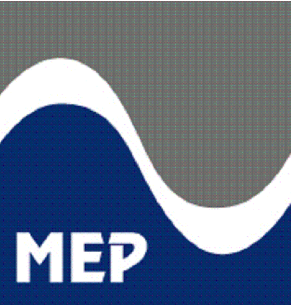
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TYPE "A"/"K"/"J"



TYPE "C"

LIGHTING CONTROLS LEGEND

- SWP SP20-MV HEAVY DUTY SWITCHPACK  
OS OAC-DT-1000-R CEILING OCC. SENSOR DUAL TECH (1000SF)  
SOS ONW-D-1001MV-W STAND ALONE WALL OCC. SENSOR



TYPE "E"

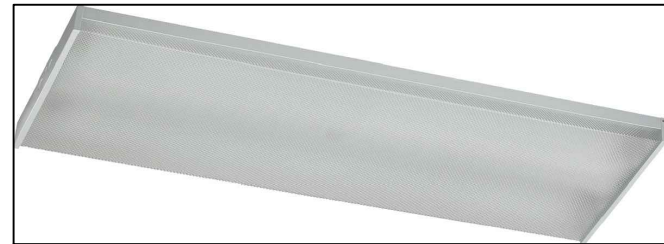


TYPE "F"



TYPE "G"

4'-0" WALL MOUNTED LIGHT/ STAIR LIGHT.  
METALUX 4-SWLED-LD4-40SL-LW-UNV  
EL14W-L840-CD1-SVPD2



TYPE "H"



TYPE "I"



TYPE "P"



TYPE "S"



TYPE "L"



TYPE "U"



TYPE "EM"



TYPE "EMO"



TYPE "EXC"



TYPE "EVO"

APARTMENT LIGHTING FIXTURE SCHEDULE			
TYPE	DESCRIPTION	MAX WATTAGE	LOCATION
"A"	SEA GULL LIGHTING/ 14701S-15: 6in TRAVERSE 3000K 90CRI WHITE	14W/LED	HALL
"K"			KITCHEN
"J"			SHOWER OR OVER THE TUB
"D"	NOT USED		
"C"	ILLUMINATED MIRROR GALAXY 24"X36" GALA24363000/GALA24366000	53W/LED	BATHROOM
"E"	MAXIM/ 51123FSBZ KNOXVILLE LED OUTDOOR WALL LANTERN	8W/LED	PATIO/BALCONY
"F"	MINKA-LAVERY/ 4962-84 ESSENTIALS 3-LIGHT FLUSH MOUNT	9W/LED	FOYER
"G"	QUORUM/ 3015-8-65	2-15W/LED	CLOSET
"H"	QUORUM / QUO 82049-4-6	4F32T8 4X32W	WATER METER ROOM
"I"	KEYLESS	15W/LED	HVAC CLOSET
"P"	MAXIM/ 51123FSBZ KNOXVILLE LED OUTDOOR WALL LANTERN	8W/LED	MAIN ENTRANCE
"S"	MINKA-LAVERY/ MINI-PENDANTS 4961-84 BRUSHED NICKEL	15W/LED	KITCHEN ISLAND

NOTE: VERIFY/COORDINATE EXACT FIXTURE TYPES WITH OWNER AND ARCHITECT BEFORE ORDERING.

COMMON AREA LIGHTING FIXTURE SCHEDULE			
TYPE	DESCRIPTION	MAX WATTAGE	LOCATION
"L"	SEA GULL LIGHTING-5925091S-962 BRUSHED NICKEL NEXUS LED 14.75DIA. FLUSH MOUNT	28W/LED	CORRIDOR/HALLWAY
"U"	4'-0" WALL MOUNTED LIGHT/ STAIR LIGHT WITH EMERGENCY BATTERY BACK-UP. METALUX 4-SWLED-LD4-40SL-LW-UNV EL14W-L840-CD1-SVPD2	38W/LED 4000 LUMENS	STAIR
"EM"	EMERGENCY LIGHT FIXTURE EATON-SURELITES-SEL60R4SD	2W/LED	CORRIDOR/HALLWAY
"EMO"	REMOTE EMERGENCY LIGHT HEAD EATON-SELW-29-BK-SD	.6W/LED	EXIT OUTDOOR
"EXC"	EXIT COMBO LIGHT EATON-SURELITES-APCH7-G WITH BATTERY BACK UP	2.8W/LED	EXIT AREAS

NOTE: VERIFY/COORDINATE EXACT FIXTURE TYPES WITH OWNER AND ARCHITECT BEFORE ORDERING.

OUTDOOR AREA LIGHTING FIXTURE SCHEDULE			
TYPE	DESCRIPTION	MAX WATTAGE	LOCATION
"EVO"	EVERGREEN LIGHTING EVOL21-W-27-124LED, 3600 LUMENS MH=7"	24W/LED	ENTRANCE-OUTDOOR

NOTE: VERIFY/COORDINATE EXACT FIXTURE TYPES WITH OWNER AND ARCHITECT BEFORE ORDERING.

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STATE OF MICHIGAN

JOSEPH A. MALKOUN

ENGINEER

No. 42833

REGISTERED PROFESSIONAL ENGINEER

TROY CROSSING APARTMENTS  
TROY, MICHIGAN

LIGHTING FIXTURE SCHEDULE

PROJECT NUMBER  
MEP # 207-18

ISSUE  
DATE  
11-29-2021  
100% OWNER REVIEW

DESCRIPTION  
COORDINATION  
PERMIT

DESIGN: J.C.  
DRAWN: J.C.

SHEET  
E.300



NOTE:  
USE THIS SCHEDULE FOR FEEDERS AND BRANCH CIRCUITS SIZING IF NOT INDICATED ON:  
1. ONE LINE AND RISER DIAGRAMS SERIES DRAWING.  
2. PANEL SCHEDULES, SPECIFICATION.

## CIRCUIT MAXIMUM DISTANCE TABLES

1. CIRCUIT MAXIMUM DISTANCE IS BASED ON NEC CHAPTER 9, TABLE 8 CONDUCTOR PROPERTIES FOR COATED COPPER CONDUCTORS AT 75 DEGREES CELSIUS.

- CIRCUIT SIZING SCHEDULES NOTES:

- ## GROUNDING DETAIL

P:\AA (2021) Projects\ (2107-18) Troy Crossing Apartments, Building 5\Production\CAD Files\E.400.dwg



TYPICAL STUDIO APARTMENT PANEL SCHEDULE														
PROJECT : TROY CROSSING APARTMENTS (Bldg. No. 5)														
PANEL NO.    Typ.		208/120V    1PH, 3W			100A MLO			10,000 A/C						
DESCRIPTION	POLES & AMPS	VOLT-AMPS		CIRC. NO.	A	B	POLES & AMPS	DESCRIPTION						
		A	B											
SMALL APPLIANCE		1200		1			1P/20A	BEDROOM RECEPTACLES (NOTE 2)*						
SMALL APPLIANCE			1200	3			1P/20A	GENERAL RECEPTACLES (NOTE 2)						
HVAC UNIT (NOTE 1)	2P	1830		5			1P/20A	REFRIGERATOR						
	30A		1830	7			1P/20A	SMALL APPLIANCE						
ELECTRIC DRYER	2P	2500		9			1P/20A	SPARE						
GARBAGE DISPOSAL	1P/15A	860		11			1P/15A	GFI BATHROOMS ( NOTE 2)						
DISHWASHER	1P/15A		1200	13			1P/20A	SPARE						
GENERAL LIGHTS, EXHAUST FANS,BELL, SMOKE DETECTORS (NOTE 2)	1P/20A	300		15			1P/20A	KITCHEN HOOD/MICROWAVE COMBO						
LAUNDRY CIRCUIT (WASHER)	1P/20A		1500	17			1P/20A	SPARE						
SPARE	1P/15A			19			1P/20A	SPARE						
SPARE	1P/15A			21			1P/20A	SPARE						
SPARE	1P/15A			23			1P/20A	WIP RECEPTACLE (NOTE 2)						
TOTAL		6,690.0	8,230.0					TOTAL						
		A	B					TOTAL						
		8,910	14,230					23,140	VA					
		LTG.	REC.	MECH.	EQUIP.			TOTAL						
TOTAL CONNECTED LOAD		300	4,080	3,660	15,100			23,140	VA					
DEMAND LOAD		375	4,080	4,575	7,550			16,580	VA					
								80	AMP					

NOTE 1. COORDINATE HVAC UNIT EXACT LOAD VA & BREAKER SIZE WITH MECH TRADE.

NOTE 2. PROVIDE ARC FAULT CIRCUIT BREAKER PER NEC 210-12 (REFER TO TYPICAL WIRING DIAGRAM ON THIS SHEET) THIS INCLUDES ALL 15A & 20A CB OTHER THAN BATHROOMS

NOTE 3. COORDINATE EXACT LOAD VA WITH MECHANICAL TRADE.

NOTE 4. PROVIDE GFI CB FOR CIRCUIT SERVING GARBAGE DISPOSAL DISHWASHER LAUNDRY CKT & SMALL APPLIANCE AND MICROWAVE OVEN.

\* ARC FAULT CIRCUIT BREAKER (SEE TYPICAL WIRING DIAGRAM FOR ARC FAULT CIRCUIT BREAKER WIRING DIAGRAM) ON THIS SHEET.

TYPICAL 2 BEDROOM APARTMENT PANEL SCHEDULE														
PROJECT : TROY CROSSING APARTMENTS (Bldg. No. 5)														
PANEL NO.    Typ.		208/120V    1PH, 3W			125A MLO			10,000 A/C						
DESCRIPTION	POLES & AMPS	VOLT-AMPS		CIRC. NO.	A	B	POLES & AMPS	DESCRIPTION						
		A	B											
SMALL APPLIANCE		1200		1			1P/20A	BEDROOM RECEPTACLES (NOTE 2)*						
SMALL APPLIANCE			1200	3			1P/20A	GENERAL RECEPTACLES (NOTE 2)						
HVAC UNIT (NOTE 1)	2P	2288		5			1P/20A	REFRIGERATOR						
	35A		2288	7			1P/20A	SMALL APPLIANCE						
ELECTRIC DRYER	2P	2500		9			1P/20A	GARAGE RECEPTACLE						
GARBAGE DISPOSAL	1P/15A	860		11			1P/15A	GFI BATHROOMS ( NOTE 2)						
DISHWASHER	1P/15A		1200	13			1P/20A	SPARE						
GENERAL LIGHTS, EXHAUST FANS,BELL, SMOKE DETECTORS (NOTE 2)	1P/20A	350		15			1P/20A	BEDROOM RECEPTACLES (NOTE 2)*						
LAUNDRY CIRCUIT (WASHER)	1P/20A		1500	17			1P/20A	KITCHEN HOOD/MICROWAVE COMBO						
SPARE	1P/15A			19			1P/20A	SPARE						
SPARE	1P/15A			21			1P/20A	SPARE						
SPARE	1P/15A			23			1P/20A	WIP RECEPTACLE (NOTE 2)						
TOTAL		7,198.0	8,688.0					TOTAL						
		A	B					TOTAL						
		11,218	14,628					25,846	VA					
		LTG.	REC.	MECH.	EQUIP.			TOTAL						
TOTAL CONNECTED LOAD		350	5,520	4,576	15,400			25,846	VA					
DEMAND LOAD		438	5,520	4,576	7,700			18,234	VA					
								88	AMP					

NOTE 1. COORDINATE HVAC UNIT EXACT LOAD VA & BREAKER SIZE WITH MECH TRADE.

NOTE 2. PROVIDE ARC FAULT CIRCUIT BREAKER PER NEC 210-12 (REFER TO TYPICAL WIRING DIAGRAM ON THIS SHEET) THIS INCLUDES ALL 15A & 20A CB OTHER THAN BATHROOMS

NOTE 3. COORDINATE EXACT LOAD VA WITH MECHANICAL TRADE.

NOTE 4. PROVIDE GFI CB FOR CIRCUIT SERVING GARBAGE DISPOSAL DISHWASHER LAUNDRY CKT & SMALL APPLIANCE AND MICROWAVE OVEN.

\* ARC FAULT CIRCUIT BREAKER (SEE TYPICAL WIRING DIAGRAM FOR ARC FAULT CIRCUIT BREAKER WIRING DIAGRAM) ON THIS SHEET.

TYPICAL 1 BEDROOM APARTMENT PANEL SCHEDULE														
PROJECT : TROY CROSSING APARTMENTS (Bldg. No. 5)														
PANEL NO.    Typ.		208/120V    1PH, 3W			100A MLO			10,000 A/C						
DESCRIPTION	POLES & AMPS	VOLT-AMPS		CIRC. NO.	A	B	POLES & AMPS	DESCRIPTION						
		A	B											
SMALL APPLIANCE		1200		1			1P/20A	BEDROOM RECEPTACLES (NOTE 2)*						
SMALL APPLIANCE			1200	3			1P/20A	GENERAL RECEPTACLES (NOTE 2)						
HVAC UNIT (NOTE 1)	2P	1372		5			1P/20A	REFRIGERATOR						
	20A		1372	7			1P/20A	SMALL APPLIANCE						
ELECTRIC DRYER	2P	2500		9			1P/20A	SPARE						
GARBAGE DISPOSAL	1P/15A	860		11			1P/15A	GFI BATHROOMS ( NOTE 2)						
DISHWASHER	1P/15A		1200	13			1P/15A	SPARE						
GENERAL LIGHTS, EXHAUST FANS,BELL, SMOKE DETECTORS (NOTE 2)	1P/20A	300		15			1P/20A	SPARE						
LAUNDRY CIRCUIT (WASHER)	1P/20A		1500	17			1P/20A	KITCHEN HOOD/MICROWAVE COMBO						
SPARE	1P/15A			19			1P/20A	SPARE						
SPARE	1P/15A			21			1P/20A	SPARE						
SPARE	1P/15A			23			1P/20A	WIP RECEPTACLE (NOTE 2)						
TOTAL		6,232.0	7,772.0					TOTAL						
		A	B					TOTAL						
		8,452	14,072					22,524	VA					
		LTG.	REC.	MECH.	EQUIP.			TOTAL						
TOTAL CONNECTED LOAD		300	4,080	2,744	15,400			22,524	VA					
DEMAND LOAD		375	4,080	3,430	7,700			15,585	VA					
								75	AMP					

NOTE 1. COORDINATE HVAC UNIT EXACT LOAD VA & BREAKER SIZE WITH MECH TRADE.

NOTE 2. PROVIDE ARC FAULT CIRCUIT BREAKER PER NEC 210-12 (REFER TO TYPICAL WIRING DIAGRAM ON THIS SHEET) THIS INCLUDES ALL 15A & 20A CB OTHER THAN BATHROOMS

NOTE 3. COORDINATE EXACT LOAD VA WITH MECHANICAL TRADE.

NOTE 4. PROVIDE GFI CB FOR CIRCUIT SERVING GARBAGE DISPOSAL DISHWASHER LAUNDRY CKT & SMALL APPLIANCE AND MICROWAVE OVEN.

\* ARC FAULT CIRCUIT BREAKER (SEE TYPICAL WIRING DIAGRAM FOR ARC FAULT CIRCUIT BREAKER WIRING DIAGRAM) ON THIS SHEET.

RETAIL RP-R1 PANEL																									
PROJECT : TROY CROSSING APARTMENTS (Bldg. No. 5)																									
PANEL NO. R1		208 /120 V, 3Ø , 4W,			200			AMP.		M.C.B.		A/C													
DESCRIPTION	POLES & AMPS	VOLT-AMPS			CIRC. NO.	A	B	C	CIRC. NO.	VOLT-AMPS			POLES & AMPS	DESCRIPTION											
		A	B	C						A	B	C													
RECEPTACLES (7)	1P/20A	1,260			1				2	1,000			1P/20A	TV & TELEPHONE BACK BOARD											
LIGHTING - EXTERIOR	1P/20A		73		3				4	1,000			1P/20A	OUTDOOR SIGN											
FURNACE 1/2HP. & EF-2	1P/20A			1,318	5				6			108	1P/20A	L-INDOOR LIGHTING											
ACCU-1	30	1,882			7				8	500			1P/20A	ROOF RECEPTACLES											
	2P		1,882		9				10		1,318		1P/20A	FURNACE 1/2HP. & EF-2											
ACCU-1	30			1,882	11				12				1P/20A	SPARE											
	2P	1,882			13				14				1P/20A	SPARE											
SPARE	1P/20A				15				16				1P/20A	SPARE											
SPARE	1P/20A				17				18				1P/20A	SPARE											
SPARE	1P/20A				19				20				1P/20A	SPARE											
SPARE	1P/20A				21				22				1P/20A	SPARE											
SPARE	1P/20A				23				24				1P/20A	SPARE											
SPARE	1P/20A				25				26				1P/20A	SPARE											
SPARE	1P/20A				27				28				1P/20A	SPARE											
SPARE	1P/20A				29				30				1P/20A	SPARE											
SPARE	1P/20A				31				32				1P/20A	SPARE											
SPARE	1P/20A				33				34				1P/20A	SPARE											
SPARE	1P/20A				35				36				1P/20A	SPARE											
SPARE	1P/20A				37				38				1P/20A	SPARE											
SPARE	1P/20A				39				40				1P/20A	SPARE											
SPARE	1P/20A				41				42				1P/20A	SPARE											
TOTAL		5,024.0	1,955.0	3,200.0						1,500.0	2,318.0	108.0													
TOTAL CONNECTED		<table><tr><td>LTG</td><td>REC</td><td>MECH</td><td>EQUIP.</td></tr><tr><td>6,524.0</td><td>4,273.0</td><td>3,308.0</td><td></td></tr><tr><td>1,108.0</td><td>2,760.0</td><td>10,237.0</td><td>0.0</td></tr></table>				LTG	REC	MECH	EQUIP.	6,524.0	4,273.0	3,308.0		1,108.0	2,760.0	10,237.0	0.0	<table><tr><td>TOTAL</td></tr><tr><td>14,105.0 VA</td></tr><tr><td>TOTAL</td></tr><tr><td>14,105.0 VA</td></tr></table>				TOTAL	14,105.0 VA	TOTAL	14,105.0 VA
LTG	REC	MECH	EQUIP.																						
6,524.0	4,273.0	3,308.0																							
1,108.0	2,760.0	10,237.0	0.0																						
TOTAL																									
14,105.0 VA																									
TOTAL																									
14,105.0 VA																									
DEMAND LOAD		<table><tr><td>1,385.0</td><td>2,760.0</td><td>10,237.0</td><td>0.0</td></tr><tr><td>Summer</td><td></td><td></td><td></td></tr><tr><td>Winter</td><td></td><td></td><td></td></tr></table>				1,385.0	2,760.0	10,237.0	0.0	Summer				Winter				<table><tr><td>14,382.0 VA</td></tr><tr><td>39.9 AMP</td></tr></table>				14,382.0 VA	39.9 AMP		
1,385.0	2,760.0	10,237.0	0.0																						
Summer																									
Winter																									
14,382.0 VA																									
39.9 AMP																									



SECTION 16000 – GENERAL PROVISIONS			D. Work Included (but not limited to)			I. Sleeves and Inserts			1.09 POSITION OF EQUIPMENT AND OUTLETS		
PART 1 – GENERAL											
1.01 RELATED DOCUMENTS			1. Raceways and Fittings			Sleeves and inserts shall be provided and installed by the Electrical Contractor as noted in previous sections and as follows:			A. Outlets shall be located as follows:		
A. The General Provisions of the contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this section.			2. Conductors			1. Where conduits are to pass through floor slabs and pipe slots are not provided, pipe sleeves of correct size shall be installed and securely fastened in the concrete forms to avoid damage or movement of the sleeve at any time.			Toggle Switches 44" AFF measured to bottom of outlet		
1.02 QUALITY ASSURANCE			3. Outlet boxes and covers			2. Holes in miscellaneous metals will be arranged for in advance with the trades involved. If the information is not provided when required, the Electrical Contractor shall provide and pay for the holes with the location requiring approval by the Architect.			Receptacles 12" AFF (minimum) measured to bottom of outlet		
A. Comply with all laws that apply and with regulations of the National Electric Code.			4. Multi-metering/main switch service equipment			J. Location of Equipment			Lighting Panels 72" to top circuit breaker		
B. Inspection and certification by the authorized inspection department will be required. Obtain all necessary permits and pay all inspection fees. Two copies of the certificate of approval shall be turned over to the Owner.			5. Load Centers			1. Motor starters shall be located as close as possible to the equipment served.			1.10 PHOTOELECTRIC CELLS FOR OUTDOOR LIGHTING		
1.03 PRODUCTS			6. Switches and Receptacles			END OF SECTION 16100			A. These shall be heavy duty type resistor 600 Volt capacitor and printed circuits, self-cleaning len s with directional lower and relay time delay, weatherproofing housing (rustproof aluminum housing coated with weatherproof epoxy), fail safe operation tested and rated for the particular service application, light service louvers with 3 color coated leads; Area Lighting PT-15 or approved equal.		
A. Materials and equipment used shall bear the UL label and main service equipment shall bear the UL approval for "Service Entrance Equipment".			7. Over current protective devices			SECTION 16200 – ELECTRICAL SERVICE AND DISTRIBUTION			1.11 CONTACTORS		
1.04 WORK REQUIREMENTS			8. Electrical Service (under ground)By Utility Co.			PART 1 – GENERAL			A. Individual contactors shall be 120 VAC, 240 VAC (as noted on Drawings), 1 phase, electrically operated, units with 120 VAC coil, Contactors shall be of same ampere rating as circuit wiring and shall be of type suitable for type of load served.		
A. Cutting, Patching, Etc.:			9. Grounding			1.01 RELATED DOCUMENTS			END OF SECTION 16200		
1. "Build-in" work, and be responsible for holding work in place while concrete is being poured, and while walls are being built. Have competent men available at all times to see that work is coordinated with other trades.			10. Interior, exterior lighting			A. The General Provisions of the contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this section.			SECTION 16400 – LIGHTING		
2. Any and all cutting or revision of the building made necessary by the improper l ocation of electrical work or by the failure to build such work into the structure, shall be done at the expense of the Electrical Sub-Contractor.			11. Yard lighting including poles and bases			1.02 ELECTRICAL SERVICE			PART 1 – GENERAL		
3. No cutting shall be done which is liable to impair the strength of the building.			12. Telephone system and wiring			A. Electrical power for buildings will be supplied from the underground distribution by local utility company. Utility Company will install an underground primary line to serve the building and will furnish and install a pad mount transformer.			1.01 RELATED DOCUMENTS		
B. Field Measurements:			13. Smoke detectors			B. The Electrical Contractor shall pay directly to Utility Company all underground service entrance charges.			A. The General Provisions of the contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this section.		
1. All measurements necessary for the proper installation of material or apparatus shall be taken in the field. Contractor will be held responsible for the fit of all work installed.			14. Equipment Pads(See 16100-1.02 H.5)			C. If Utility Company does not install secondary service conductors the Electrical Contractor shall furnish and install secondary underground service conductors, installed per code, from terminals of the utility transformer to main switchboards or meter banks.			1.02 LIGHTING FIXTURES		
C. Inspection of Site:			15. Temporary Services			D. The Electrical Contractor shall install metering equipment, in accordance with requirements of utility and/or as indicated on drawings.			A. Furnish and install lighting fixtures of the size, type and rating indicated on the drawings and in the lighting fixture schedule. All light fixtures shall be completely wired, fully lamped and U.L. listed.		
1. Proposals based upon the drawings and specifications shall be held as made with full knowledge of conditions and requirements. The Electrical Sub-Contractor will be held to have visited the premises prior to the time of submitting the proposal for the work herein described and to have thoroughly inspected the conditions under which this contract is to be executed.			16. Excavation and Back filling (See 16100-1.04 H)			E. Multi-Metering Equipment			B. Furnish and install all lamps. Fluorescent lamps shall be electronic ballast cool white, rapid start. Incandescent lamps shall be inside treated rated at 120V or 130V. Lamps shall be made by General Electric, Westinghouse or Sylvania.		
D. Supervision of Work:			17. Doorbell system			F. Distribution			C. Ballasts used in all fluorescent fixtures shall be energy saving, rapid start, high power factor, C.B.M. – E.T.L. approved. Premium Class "P" U.L. tested and of proper voltage for circuit feeding fixture. Ballasts shall have a Class A sound rating, for those ballasts not available with a Class A sound rating, the best rating available shall be furnished.		
1. The Electrical Sub-Contractor shall have a competent superintendent in charge of the work at all times. This Superintendent shall be qualified and have suitable experience in the type of work to be installed under this contract.			18. Cable–television system.			1. The Electrical Contractor shall install a distribution system throughout the building as follows:			D. Furnish and install all boxes, frames, channels, rods mounting accessories, etc., for supporting light fixtures.		
E. Cleaning and Finishing:			19. Intercom system.			a. 120/240 Volt, 1 phase, 3-wire system to each tenant and house panels as indicated on drawings.			E. Contractor shall verify all ceiling types with General Contractor prior to ordering fixtures and necessary mounting accessories.		
1. After all equipment has been installed and is ready for use and before this contractor leaves that job, he shall thoroughly clean all equipment furnished and installed by him, removing all plaster, stickers, rust stains and other foreign matter, leaving every part in excellent condition and ready to use, and in a condition to meet the approval of the Owner's Representative.			20. Control devices and wiring for any items shown on any drawings that are not included in Division 15.			B. Lugs and connectors shall be of an approved solderless type, and installed accessible (capable of being removed and inspected without removing access panels or disturbing the building structure or finish).			F. New light fixtures shall not be used as temporary lighting until after permanent installation.		
G. Removal of Rubbish: See Division 1.			21. Complete testing of all equipment and systems after the completion of the project.			C. Cable connectors equal to "Anderson Electric". All cable connections to buried ground rod shall be per code.			G. Contractor shall leave all light fixtures clean inside and out, replace all burned-out lamps, and protect installed fixtures from damage during the remainder of the construction period.		
H. Damage to Other Work: See Division 1.			SECTION 16100 – BASIC MATERIALS AND METHODS			D. Provide an intersystem (such as CATV system) bonding termination (BT) for connecting intersystem bonding conductors external to enclosures at the service equipment. Installation shall be per NEC 250-94			1.03 LIGHTING FIXTURE SCHEDULE		
I. Legal Requirements: See Division 1.			PART 1 – GENERAL			1.04 WATER PIPE GROUND			A. See schedule of lighting fixtures on the drawings.		
J. Cooperation with Other Sub-Contractors: See Division 1.			1.01 RELATED DOCUMENTS			A. Furnish and install grounding conductor from neutral bus of service entrance equipment and service entrance to a cold water pipe. Water pipe (cast iron or copper) connections shall be with approved fitting that bonds both conduit and conductor to water pipe.			END OF SECTION 16400		
K. Design and Record Documents: See Division 1.			A. The General Provisions of the contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this section.			B. Minimum conduit size shall be 1/2", except for switch legs, single motors, and individual circuit runs beyond the main raceway "trunklines".			SECTION 16500 – COMMUNICATIONS		
L. Drawings:			B. Electrical SubContractor shall furnish and install all conduits, outlet boxes, interface boxes, pullboxes, cable, etc. as necessary for a complete and operating system. Electrical SubContractor shall contact telephone company during bidding period to determine method of telephone conduit and cable installation and shall include cost of installing per telephone company's requirements in base electrical contract. All telephone work shall be done in cooperation and conjunction with the local telephone company.			C. Buried conduit, exterior to the building may be Carlon Schedule 40 PVC plastic minimum of 24" below grade. Rigid steel conduit below grade and exterior to the building shall have 2 coats of asphaltum coating for 12" at joints and 12" above and below where it enters the ground. Plastic conduit solvent shall be brush on type applied liberally, spray type not allowed.			PART 1 – GENERAL		
1. The electrical design drawings are intended to accompany and supplement the specifications.			1.02 GENERAL			D. Provide plastic bushing or insert at all conduit terminations.			All low voltage cable shall be installed per code Sections: 725 Class 1, Class 2 and Class 3 Remote-Control, Signaling, and Power-limited Circuits, 760 Fire Alarm, 800 Communication, 820 CATV		
2. In addition to the site and electrical design drawings, consult the Architectural Drawings, Civil Drawings, and the Mechanical drawings to avoid interferences or conflicts.			A. All wiring shall be non-metallic sheathed cable (Type NM-C) or service entrance cable (Type SE), except where conduit or electrical metallic tubing is required by code.			E. Insert a nylon pull line in all conduits designated as empty for future use of as spares.			1.01 RELATED DOCUMENTS		
3. In the event of disputes arising because of discrepancies between drawings of the Architectural, Mechanical and/or Electrical Trades, such disputes shall be taken up with the Architect whose decision will be final.			B. Feeder wire insulation shall be type THW, THHN or Villukene type RHW grade, moisture and heat resistant thermoplastic not less than NEC Code Standard for 600 volts, except as otherwise herein specified. Type THW or THHN insulation shall be used for lighting and receptacle circuits.			F. Clean conduits thoroughly and dry inner surface before conductors are installed. Conduits found to be plugged or so exceptionally dirty that they cannot be satisfactorily cleaned shall be removed and replaced.			A. The General Provisions of the contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this section.		
M. Explanation of Drawings and Specifications:			C. Non-metallic cable (Romex) may be used for wiring, where allowed by code, provided cable is protected per code where it may be exposed to physical damage. Type SE cable may also be used.			G. Seal conduits installed for future use or use by others with an approved type conduit cap or plug.			1.02 TELEPHONE SYSTEM		
1. The drawings accompanying these specifications are intended to show the general design and arrangement of the installations and in some cases are more or less diagrammatic. They are not intended to serve as shop drawings.			D. Wherever groups of conduits make angle bends, a hanger or support shall provided at an angle bisecting the turn to support all rows of the group.			H. Fastening, Supports and Hangers			A. Electrical SubContractor shall furnish and install all conduits, outlet boxes, interface boxes, pullboxes, cable, etc. as necessary for a complete and operating system. Electrical SubContractor shall contact telephone company during bidding period to determine method of telephone conduit and cable installation and shall include cost of installing per telephone company's requirements in base electrical contract. All telephone work shall be done in cooperation and conjunction with the local telephone company.		
2. The Electrical Drawings shall be consulted to determine the actual location of switches receptacles, and other electrical items, should an interference occur, the electrical item shall be relocated as required with no additional cost to the Owner.			5. All floor mounted equipment shall be installed on 3" concrete pads; furnished and installed as part of this Division.			1.05 TEMPORARY LIGHT AND POWER			B. Telephone interface boxes in apartments will be furnished by the local telephone company and installed as part of the telephone wiring system by the electrical subcontractor.		
3. These drawings are intended to be cooperative with the specifications and together to describe and provide for finished work. What is called for by either shall be as binding as if called for by both. The Contractor will understand that the work shall be complete, and such omissions shall not entitle this Contractor to make claims for extras on materials or labor.			1.03 CONDUCTORS			A. See Division 1.			C. Telephone jacks in apartments will be furnished antistalled as part of the telephone wiring system by the electrical subcontractor.		
4. All dimensions which tie mechanical and/or electrical installations to the building structure shall be thoroughly field-checked for accuracy and possibility of interferences due to field conditions. Ignorance of such field conditions because of failure to field-check the dimensions in question will be no excuse for additional compensation. All exposed field conditions shall be approved by Architect's Representative. Verify all door swings and clearances to cabinets, etc. before locating switch, outlet and fixture boxes.			A. All conductors shall be A.W. Gauge, stranded copper of the size indicated on the drawings. Aluminum conductors may be used for service entrance cable only. Minimum wire size shall be #14 copper, except for low voltage wire, wire sizes shall comply with NEC voltage drop requirements.			B. The Contractor shall provide a minimum of 200 ampere, 120/240 volt, 1 phase temporary electric service for each building and shall install and maintain temporary lighting and power throughout the project.			D. Telephone cable between terminal boxes and telephone jacks shall be furnished and installed by the electrical contractor. Telephone cable shall be 4 conductor #24 "station wire".		
5. Electrical work is indicated on the Drawings by standard symbols. See legend on the drawings.			B. Feeder wire insulation shall be type THW, THHN or Villukene type RHW grade, moisture and heat resistant thermoplastic not less than NEC Code Standard for 600 volts, except as otherwise herein specified. Type THW or THHN insulation shall be used for lighting and receptacle circuits.			C. Temporary wiring shall be removed from each area as soon as the permanent wiring is installed and operational.			E. The Electrical Subcontractor shall coordinate all telephone service with the local telephone company.		
N. Shop Drawings and Conduit Layouts:			C. Non-metallic cable (Romex) may be used for wiring, where allowed by code, provided cable is protected per code where it may be exposed to physical damage. Type SE cable may also be used.			D. All work shall conform to OSHA requirements.			1.03 DOOR BELL SYSTEM		
1. The Contractor shall check and approve shop drawings on all equipment to be furnished by him and submit to the Architect for final approval. Shop drawings shall be assembled in sets with a front sheet allowing room for architects stamp. This will eliminate the need to stamp each individual sheet. The name of the project along with the project number shall be marked on the front sheet of each set by the contractor.			1.04 WIRING METHODS			1.06 ELECTRICAL DISTRIBUTION SYSTEM			A. Operation of systems:		
2. Approval of shop drawings by the Architect does not relieve the Contractor from the full performance of this contract. The Architect does not assume responsibility to actual dimensions or for the fit of the completed work in position, nor does such approval relieve the Contractor of full responsibility for the proper and correct execution of the work required.			A. General			A. Tenant Apartment Meter and Main Switch			1. Visitor by depressing pushbutton shall activate chime.		
1.05 SCOPE OF WORK			1. Electrical Contractor shall cooperate with other trades in clearing equipment and inserts by at least six (6) inches. If the indicated location of any electrical outlet or item is conceded by work of other trades or otherwise improperly located, this Contractor shall install the item to clear the interference and extend conduit and wiring from the location indicated on the drawings.			1. Multi-metering equipment including main circuit breaker and meter panel for each unit shall be in conformance with electric utility company requirements and shall be approved by them.			B. Materials:		
A. The work to be done under this Section consists of furnishing all necessary tools, equipment, material, labor and supervision to install the electrical work. Furnish every item necessary for a complete system unless specifically listed in these specification as "not included" or "furnished by others".			B. Conductor Installation			2. Assemblies shall be wall mounted, NEMA 3R (rain-proof), steel enclosed, dead front meter stock units.			1. Chime push button shall be surface mounted. It shall be a 2-wire low voltage type. Pushbutton shall be Nutone Model B-12N.		
B. In these specifications no attempt is made to enumerate or describe each item required, but simply to indicate the principle parts and to describe the general construction and certain special items which are to apply. The work described below is meant to include complete electrical systems for the entire project.			1. Care shall be used when installing conductors to prevent damage to the conductor insulation and no excessive strain shall be exerted on the wires. Conductors shall be pulled in an approved manner than will insure the full insulation thickness and non-stretching of the conductor.			B. Electrical Panels			2. Chime shall be surface mounted. It shall sound two notes. Chime shall be Nutone Model CD-120.		
C. Work Not Included (but not limited to)			C. Control Wiring			1. Furnish and install factory assembled circuit breaker lighting loadcenters as shown on the drawings. Loadcenters shall be dead-front safety type, equipped with thermal-magnetic molded case circuit breakers with ratings as shown on the drawings. Loadcenters shall be listed by Underwriter's Laboratories and bear the UL label.			3. Transformer shall be a 16 volt secondary, 10 watts. Transformer shall be Nutone Model 101NA.		
1. Pad mount transformers			1. The Mechanical Contractor will, in general, provide and install all control wiring for equipment furnished under his contract, including control devices such as thermostats, damper motors, control switches, float switches, alternators, factory wired control switches and push buttons, and other electrical control equipment, unless otherwise indicated or specified. Hand-Off-Auto switches or push button control station for starter, will be furnished and wired by the Electrical Contractor where required or indicated except those units specified or shown with integrally mounted disconnect switch. Raintight switches shall be used for exterior installations.			2. Circuit breakers shall be quick-make, quick-break, thermal-magnetic, and have common trip on all multi-pole breakers. Circuit breakers shall be rated 10,000 AIC symmetrical for branch units at 240 V AC. Main circuit breakers shall be rated 10,000 AIC symmetrical at 240 V AC.			1.04 CABLE TELEVISION SYSTEM		
2. Painting			D. Outlets			3. Apartment panels shall be by Square D, General Electric, or ITE.			A. Electrical sub-contractor shall furnish and install all conduits, junction boxes, etc. as noted on drawings. Electrical subcontractor shall coordinate requirements withlocal cable television company.		
			1. All outlets required for feeds to equipment furnished by others shall be located in accordance with requirements of the equipment and with drawings furnished by the Equipment Supplier.			4. House lighting panels shall be approved for outdoor installation.			B. The function of the system shall be the pickup and distribution of local channels with a system VSWR less than 1:1, and a minimum of 16 dB RF isolation between outlets, and a minimum signal strength of 2000 microvolts across 75 ohms at each television outlet. Picture quality on each channel at all outlets shall be equal to the quality received directly from the antenna.		
			2. Connections from outlets to equipment built into special units may be made with flexible metallic conduit with proper connections.			1.07 DISCONNECT SWITCHES			C. Each building shall have a separate cable assembly and distribution system. They shall be mounted on galvanized steel masts provided by the electrical subcontractor. These masts shall be mounted under the supervision of the Cable T.V. system supplier.		
			E. Taps and Splices			A. 240/120 Volt			D. Coaxial cable shall be Belden #822B, or RG-59U or RG-49UF by Blonder-Tongue, of the foam di-electric type having 75 ohms nominal impedance and shall be marked with manufacturer's name.		
			1. Taps in branch circuits shall be made at outlets only, and all splices shall be made mechanically solid. Approved splicing devices may be used, and shall be T & B "Sto-kon", 3Mthree part "Scotchlok".			1. Disconnect switches shall be AC flush toggle tperated as indicated on drawings.			E. Television outlet shall be Blonder-Tongue VS-VUX. Splitters shall be Blonder-Tongue MS-2 and MS-4. Provide line terminating resistors. Provide band separators and 6'-0" of cable with termination for each T.V. outlet. Turn over to manager and obtain receipt.		
			F. Branch Circuit Wire Loading			2. Weatherproof switches shall be mounted in cast box with weathertight hinged cover.			END OF SECTION 16500		
			1. Minimum wire size for branch circuit loading shall conform to allowable voltage drops of the National Electrical Code. Minimum size of conductor for outdoor lighting circuits shall be #10 AWG. Circuits over 200 feet long shall be #8 AWG. Circuits over 300 feet long shall be #6 AWG.			A. Receptacles (Manufactures by Hubbell, Leviton, Circle F, GE or Eagle).			SECTION 16700 SUITE SMOKE DETECTOR SYSTEM (APARTMENTS)		
			2. Lugs and terminals for all wire #10 AWG and smaller shall be solderless pressure type T & B "Sto-kon".			1. For Dwelling Units and Manager's Unit: 15 ampere, residential grade, duplex grounding type, ivory, similar to Leviton #5320-L.			PART 1 – GENERAL		
			3. Lugs, terminals and connectors for conductors #8 AWG and larger shall be T & B Series 54200.			2. Range outlets shall be single, 50 ampere, 4 pole, 4 wire, 125/250 volt, surface mounted, Eagle 1212.			1.01 RELATED DOCUMENTS		
			H. Excavation and Back fill			3. Weatherproof receptacles shall be Leviton #5320 with Eagle S2962.			A. Each Document listed in the Index, together with Division 1, is part of the contract for the work of this section.		
			1. This Contractor shall perform full excavating and back fill for all cable and conduit trenches, except utility trenches. This Contractor shall perform final grading and landscaping as required to match existing after back fill.								